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To ascertain the number of entry level off-farm agricultural jobs by specific job title in New York with implications for curriculum development, 1,110 nonpublic employers were contacted from a population of over 7,000 listed by the New York State Department of Labor. A 70 percent return of the employer survey questionnaire and a 28-percent return of the employee questionnaire yielded the following major findings: (1) There were 38,521 projected off-farm agricultural entry level jobs in private industry, with an anticipated growth of 5.2 percent over a 5-year period, (2) Projected increases in new job positions were greatest in the area of horticultural services, (3) Approximately 20 percent of the off-farm agricultural employees are in the age category of 20 years or younger, (4) Job position turnover rates range from 14 to 46 percent, (5) 404 newly created positions and 5,778 replacement positions are anticipated during the next 5 years, (6) 92 different entry level job titles were identified, with dairy plant workers, salesman drivers, and landscape laborers being the three job titles with the largest number of employees, and (8) 14 tasks were identified which were common to 5 or more different job titles. (DM)

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ENTRY OCCUPATIONS IN OFF-FARM AGRICULTURE

A Survey and Task Analysis of Entry Level Off-Farm Agricultural Occupations in New York State

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ENTRY OCCUPATIONS IN OFF-FARM AGRICULTURE; ~~--~~ A SURVEY AND TASK ANALYSIS OF ENTRY LEVEL OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK STATE.

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July 1968

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ENTRY OCCUPATIONS IN OFF-FARM AGRICULTURE -- A SURVEY AND TASK ANALYSIS OF ENTRY LEVEL OFF-FARM AGRICULTURAL OCCUPATIONS IN NEW YORK STATE

William E. Drake and Frederick K. T. Tom

INTRODUCTION

Importance of the Study

Since the passage of the Smith Hughes Act in 1917, vocational education in agriculture has had a successful history of "meeting the needs of persons over fourteen years of age who have entered upon or are preparing to enter upon the work of the farm."[1] But in recent years, vast changes in agriculture have brought about significant changes in the nature of agricultural employment. First, the opportunity for trained persons in agriculture is shifting from farm to non-farm occupations. Farm mechanization, the high capital requirement for entry into farm ownership and diverted land use are some of the factors causing the shift in agricultural employment. Second, those individuals remaining on farms are becoming specialists in production agriculture. Their activities are largely concerned with the efficient production of plants and animals. This trend leads to a third, that of the growth and development of new agricultural occupations which supplement and compliment the production occupations. As a result of such trends, the 88th Congress specified in the Vocational Education Act of 1963 that ..."any amounts allotted for agriculture may be used for vocational education in any occupation involving knowledge and skills in agricultural subjects whether or not such occupations involve work of the farm..."[2]

There is ample evidence to indicate that the number of off-farm agricultural occupations is increasing.[3] In many cases, supplemental or off-farm agricultural occupations have developed in marketing, processing sales, and service. As the occupations complex in agriculture has changed, then it follows that the educational needs of agricultural workers have also changed.

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[1] Administration of Vocational Education, Vocational Education Bulletin No. 1, General Series No. 1, U. S. Department of Health, Education and Welfare, (Washington: Government Printing Office, 1958), p. 27.

[2] Committee of Labor and Public Welfare, United States Senate, Selected Education Acts of 1963, (Washington, D. C.: U. S. Government Printing Office, 1963), p. 67.

[3] "The Challenge of Jobless Youth," a Report by the President's Committee on Youth Employment, Washington 25, D. C., 1963, p. 2.

The Problem

This study constitutes an effort to obtain information concerning the vocational training needs of high school students who are preparing for employment in the agricultural occupations complex in New York State. The study attempts to identify present and projected employment opportunities in agricultural occupations and, by means of task analysis, determine the vocational training needs of persons entering employment in off-farm agricultural occupations in the State.

This study will attempt to answer the following questions:

1. What are the present and projected employment opportunities in off-farm agricultural occupations?

2. What are the job specifications (duties and responsibilities) of workers in those off-farm agricultural entry occupations for which there are adequate employment opportunities?

3. To what degree are certain job specifications (duties and responsibilities) common among the off-farm agricultural occupations studied?

Previous Research

A. Studies in New York State:

In 1961, Tom[4], Hill and Greene studied 17 occupations related to farming in the Syracuse area and found 152 annual entry opportunities. Employers in agricultural businesses expressed a preference for employees with a high school education, training in vocational agriculture, and farm experience.

Price[5] discovered 53 companies employing a total of 248 persons in occupations requiring agricultural competencies in the Wayland Central School District in 1963. More than one-half of these persons were classified at the semi-skilled and skilled levels of employment. It was found that the same agricultural competencies usually useful for entry are needed on the job and are a factor in advancement.

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[4] Tom, Frederick K. T., Charles W. Hill, and Kingsley L. Greene, Employment Opportunities in Certain Occupations Related to Farming in the Syracuse, New York Economic Area, Rural Education Department, Cornell University Agricultural Experiment Station, New York State College of Agriculture, Cornell University, Ithaca, New York, June 1961. Page 17.

[5] John E. Price. (Preliminary data for Master's essay, Cornell University, Ithaca, New York, 1963).

In 1964, Cushman[6], Christensen, and Bice found 256 job titles requiring agricultural competencies in 594 businesses in 18 school districts. On a per school district basis, it was estimated that there were 110 full-time and 65 part-time workers in off-farm agricultural occupations. Full-time workers were found most frequently in semi-skilled, skilled, and managerial positions. Employer reports indicated that only 17 percent of the vast majority of full-time workers need more than a high school education.

The review of these studies suggests that there are varying numbers and kinds of opportunities in off-farm agricultural occupations. Relatively large numbers of workers needing agricultural competencies are classified at the skilled and semi-skilled occupational levels. A high school education is essential to enter and advance in nearly all of the off-farm agricultural occupations studied.

B. Studies in Other States:*

The studies proposed in 32 other states have revealed two common purposes, as follows: (1) to determine kinds and numbers of off-farm agricultural occupations, and (2) to determine competencies needed to become employed in the occupations identified.

The studies reviewed suggest the need for additional and more specific occupational data if realistic courses of study are to be developed. First, the sample must be representative of all agricultural occupations found in the state. Secondly, rural as well as urban occupational data is needed to provide for increasing mobility of the labor force and use in developing area school curricula. Third, more depthy occupational analysis is needed to determine more accurately the specific knowledges and skills required for job titles in agricultural occupations. Fourth, common thread educational needs must be identified for related occupations to make curriculum planning more meaningful. Finally, the concepts of agricultural and entry occupations must be defined more realistically.

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[6] Cushman, Harold R., Virgil E. Christensen, and Garry R. Bice, A Study of Off-Farm Agricultural Occupations in New York State, Rural Education Department, New York State College of Agriculture, Cornell University, Ithaca, New York. January 1965. Page 56.

* A recent summary of state studies in off-farm occupations compiled in 1965 at the Center for Vocational and Technical Education at Ohio State University covered twenty-six reports. These reports make it abundantly clear that the agricultural machinery, agricultural supply, and ornamental horticultural industries will probably be hiring the largest numbers of persons needing knowledge in agriculture. Further, that is important and most urgently needed "to strengthen, to re-design, (and) to advance the scope and intensity of research in the next several years." Summary of research findings in off-farm agricultural occupations (Ohio State University, August, 1965), p. 84. Ibid, p. 30.

Objectives

1. To determine the present and projected employment opportunities in off-farm agricultural entry occupations.

2. To determine the job specifications (duties and responsibilities) of workers in those off-farm agricultural occupations for which there are adequate employment opportunities.

3. To determine the degree to which certain job specifications (duties and responsibilities) are common among the off-farm agricultural occupations studied.

Assumptions

1. That employer responses will produce reliable data concerning the projected number of off-farm agricultural entry employees, as defined in this study.

2. That data provided by employers and employees is valid.

3. That the use of New York State Department of Labor employer listings accurately represented the off-farm employer universe in the State of New York with the exception of federal, state, and municipal employers.

4. That the use of mailed questionnaires would yield sufficient data, as per objectives, to complete the study.

5. That the data collected with the use of mailed questionnaires would be valid data.

Limitations

This study is limited to:

1. The State of New York.

2. Employers and not self-employed persons.

3. A random sample of agricultural businesses, industries and services encompassed by definitions stated in this study. Federal, state and municipal employers are not included in this study.

4. Those reporting firms (to the New York State Department of Labor) in the spring quarter of 1966.

5. Those off-farm agricultural occupations present in the agricultural businesses and services included in the definitions of this study.

Operational Definitions

1. Off-Farm Agricultural Business, Industry, or Service: is one in which a major portion of the business of service is concerned with the performance of one or more of the following activities:*

a. Sells directly to the producer or keeper of plants or animals a commodity necessary for such keeping or production.

b. Purchases directly from the producer of plant or animal products.

c. Provides directly to the producer or keeper of plants or animals a necessary service for such keeping or production.

d. Produces and/or sells plants, trees, flowers or shrubs and/or provides services pertaining to their care.

e. Provides a service directly to, or for, the public utilizing plants, trees, flowers, and animals, e.g. parks, recreation camps, and game reserves.

2. Off-Farm Agricultural Occupation: One in which a worker spends a major portion of his working time performing those competencies essential to one or more of the following activities:

a. Selling directly to the producer or keeper of plants and animals a commodity necessary for such production or keeping.

b. Purchasing directly from the producer of plant or animal products.

c. Providing directly to the producer or keeper of plants and animals a service essential to such production or keeping.

d. Produces and/or sells plants, trees, flowers, or shrubs and/or provides services pertaining to their care.

3. Entry Occupation: Any occupation in which a person may obtain employment with a secondary education or less and without previous work experience.

4. Job Title: The name by which a specific job is known (generally).[7]

5. Standard Industrial Classification Code: A grouping of industries (businesses) according to their: (1) services rendered, (2) products manufactured, (3) processes used, and (4) raw materials used.

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* The term major refers to income as per classification by the Department of Labor in the Standard Industrial Classification Code.

[7] United States Department of Labor. Dictionary of Occupational Titles 1965, Vol. I. Third Edition (Washington, D.C. 1965) p. XV.

6. Task(s): Work or job elements which, when added together, make up a job title, e.g., order parts, maintain charts, seed lawns.

Determining the Study Population

The basic unit of sampling for both employer and employee populations was the New York State off-farm agricultural employer. The universe of employers utilized was contained in the Spring 1965 quarterly reports of the New York State Department of Labor (NYSDL). Seventeen Standard Industrial Classification Codes (SIC Codes) comprised the off-farm agricultural employer areas included for study. Those firms which responded to the first series of questionnaires comprised the employer universe from which the population quotas for the employee universe were drawn.

TABLE I. STANDARD INDUSTRIAL CLASSIFICATION CODES INCLUDED IN STUDY

SIC Code Number	Verbal Designation
0192	Horticultural Specialties
0193	Animal Specialties
0715	Contract Sorting, Grading & Packing
0719	Agricultural Services NCE
0722	Offices of Vets and Animal Hospitals
0729	Animal Husbandry Services
0731	Horticultural Services
2026	Fluid Milk Industry
2411	Logging Camps Industry
5252	Farm Equipment Dealers
5962	Hay, Grain and Feed Stores
5969	Farm and Garden Supply Stores
5992	Florists
7032	Sporting and Recreational Camps
7942	Public Golf Courses
7947	Golf Clubs & Country Clubs
7948	Race Track Operation

Each off-farm agricultural job title (indicated by employers) which appeared (using preliminary returns to calculate the number of jobs) to have a minimum of one hundred workers was included in the employee universe for task analysis purposes.

There appears to be at least three shortcomings in the employer listings supplied by the NYSDL which bias the study:

1. Government organizations at all levels do not appear in the listings. So, to whatever degree the federal, state, and local units of government employ off-farm agricultural employees (e.g., gardeners, inspectors, park attendants) they are not represented in the sample.

2. The actual classification into SIC Codes is rigid. If a firm has two types of operations, e.g., feed mill and hatchery, the firm is classified (or classifies itself) under the operation which provides the majority of the income - thus "covering up" certain enterprises.

3. Some firms do not report.

TABLE II. JOB TITLES INCLUDED FOR TASK ANALYSIS

DOT Number	Job Title
419.884	Animal caretaker
419.884	Animal caretaker, medical
162.158	Buyer, agricultural produce
407.887	Campground caretaker
529.886	Dairy plant worker (dairy helper)
624.281	Mechanic, farm equipment
409.883	Equipment operator, farm
520.886	Feedstore or mill helper
142.081	Floral designer
	Foreman
407.883	Greenskeeper II
407.884	Groundskeeper
356.874	Groomer (horse, etc.)
356.874	Kennelman
407.887	Laborer, landscape
407.181	Landscape gardener
940.884	Logger - all-round
406.168	Nurseryman
920.887	Packer, agricultural produce
292.358	Salesman, driver
277.358	Salesman, farm and garden equipment and supplies
260.458	Sales clerk, flowers
289.458	Sales clerk, general
277.358	Sales person, lawn & garden equipment and supplies
409.181	Tree surgeon
409.884	Tree surgeon, helper
905.803	Truck driver, heavy
906.883	Truck driver, light

Even with the stated shortcomings, the NYSDL listing of off-farm agricultural employers provided the single most accurate source for employers which was available to the researchers.

Sampling Procedures

Each SIC Code constituted a separate strata (a total of 17) which was independetly sampled. The sample quotas were calculated using a formula designed to collect categorical data for both employer and employee universes. The formula utilized was:[8]

$$n = \frac{N}{\frac{e^2(N-1)}{(CR)^2 \; .25} + 1}$$

n = sample population
N = total population
e = error tolerated in population, 10%
CR = normal deviation if 95% use 1.96

A register of employers, by SIC Code, was supplied by the NYSDL - using a random start, each "n"th employer was systematically selected to meet sample quotas. Those employers who responded constituted the universe from which employees were drawn. The procedure for selecting employees (specific job titles) was as follows:

1. A random list of employers was prepared for each SIC Code from respondents to the employer schedule.
2. A list of job titles was prepared from the employer schedules which was to constitute the employee universe.
3. Employers were drawn (employers had indicated total number of employees by job title on their schedules) until the sample quotas were met for each specific job title.

Design of Questionnaires

Seventeen variations of one basic format were used to solicit employer information corresponding the SIC Codes selected for census. Item content for employer-questionnaires, especially in the case of job titles per SIC Code, were developed from the Dictionary of Occupational Titles (DOT). Items dealing with manpower projections and firm data were developed in consultation with employers and as abstracted from current studies.

Employee questionnaires draw quite heavily from the DOT for task analysis. The majority of the tasks, per the 28 job titles selected for study, are quoted directly from the DOT. There was a different questionnaire for each of the 28 job titles studied. Employer questionnaires were two pages in length while the employee questionnaires were limited to one page. The employer questionnaire was designed to be completed in fifteen minutes while the employee questionnaire could be completed in three to five minutes. See Appendix A.

Pre-testing Questionnaires

A minimum of ten individuals for each variation of the employer and employee questionnaires participated in pre-testing. Each respondent was mailed or given a questionnaire with necessary instructions.

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[8] Source: Professor Jason Millman, Educational Psychology and Measurement, Cornell University.

Questionnaires were edited as returned. When suspicious replies were noted, the respondent was either personally contacted or a second questionnaire was forwarded to clear up the particular issue.

Final corrections were made in both instruction format and item content. The questionnaires were printed by the mimeograph process. See sample questionnaires and correspondence in Appendix A.

Method of Data Collection

Mailed questionnaires were used to collect all data utilized in this study from both the employer and employee populations. The period of data collection for employers was from April 1966 to July 1966; for employees from November 1966 to June 1967. Employer addresses were those furnished by the New York State Department of Labor. Employee questionnaires were mailed to a sample of employers which in turn they distributed to their employees. Since very little was known about the educational background of the employee sample, a simply-designed questionnaire was utilized.

Each questionnaire (and subsequent follow-up letters) was accompanied by: (1) a letter of introduction which requested assistance, (2) instructions, and (3) a stamped self-addressed envelope. Two follow-up letters, spaced three weeks apart, were sent to all non-respondents. In some cases telephone calls were used to solicit non-returns in employer populations.

Editing of Questionnaires and Statistical Treatment of Data

Incomplete questionnaires were returned, a copy thereof, to the employer respondent category for correction and/or completion. In the case of the employee universe, incomplete returns were discarded with no follow-up procedure utilized to retrieve data. The reason for not attempting to gather "lost" employee data was due to the extremely poor returns which placed all of the data in the biased category.

Statistical treatment of the data was limited to cross-tabulating procedures and computing means; these data were then placed in distribution tables. Programs and statistical analyses were acquired and processed through the Cornell Computing Center.

Employer Response to the Questionnaire

Employer returns representing seventeen Standard Industrial Classifications averaged just over 70 percent. A limited number of these returns were from self-employed "employers," and therefore, are not included in the summary. It is interesting to speculate why the Feed Store Proprietors' and Veterinarians' return percentages on the questionnaire were considerably higher than the average for the seventeen employer groups. Feed Store and Office of Veterinarian returns were 90

TABLE III. NUMBER AND KINDS OF OFF-FARM AGRICULTURAL INDUSTRIES STUDIED

SIC Code	Agricultural Industry	Number			Percent Response	Size of Sample In Percent
		In Population	Contacted	Responded		
0192	Horticultural specialties	109	43	28	65	25.7
0193	Animal specialties	41	29	22	58	53.7
0715	Contract sorting, grading & packing & shipping fruits & vegetables for the grower	17	17	12	71	70.6
0719	Agricultural services not classified elsewhere	43	30	23	77	53.5
0722	Offices of veterinarians and animal hospitals	422	79	65	83	15.4
0729	Animal husbandry services not elsewhere classified	253	70	47	68	18.7
0731	Horticultural services	2,027	92	52	57	2.5
2026	Fluid milk	625	83	59	71	9.4
2411	Logging camps and logging contractors	186	62	43	70	23.1
5252	Farm equipment dealers	516	81	57	70	11.0
5962	Hay, grain and feed stores	422	79	71	90	16.8
5969	Farm & garden supply stores not elsewhere classified	274	72	55	77	20.0
5992	Florist	1,142	89	58	65	5.1
7032	Sporting and recreational camps	472	80	58	73	12.3
7942	Public golf courses	75	43	35	81	46.7
7947	Golf clubs and country clubs	382	77	60	78	15.6
7948	Race track operation, including racing stables	312	74	44	60	10.9
TOTAL		7,318	1,110	789	71.3	10.7

and 83 percent respectively. However, with three follow-up letters it was impossible to obtain more than 58 percent of the returns from Horticultural firms. This was especially unfortunate since this group comprised 45 percent of the off-farm agricultural personnel studied. Sufficient data were returned to extend projections for these employment groups.

Employee Response to the Task Analysis Questionnaire

Employee questionnaire returns averaged 16 percent for the 28 job titles studied. Why employees failed to respond to the Task Analysis questionnaire is conjecture. Those questionnaires returned were complete and accurate which tends to rule out the possibility that the schedules were difficult for the respondents to comprehend. What is suspected is that the questionnaires which were mailed to employers for distribution to their respective employees were either (1) not distributed, (2) distributed with low key emphasis on return, or (3) employers were at a loss to "identify" the number of employees they had specified as being employed in each job title.

The end result was that returns were quite limited for most job titles and only four titles had returns of 30 percent or more which limits the practical exposition of these data. Partial analysis is provided; however, all of these data should be considered preliminary and quite susceptible to the bias due to limited response. Regardless of this limitation, the information is portrayed for possible indicators which might be worthy of future study.

TABLE IV. NUMBER AND KINDS OF AGRICULTURAL JOBS STUDIED

Job Title	Number			
	In Population	Sample Size	Responded	Percent Response
Animal caretaker (Agr)	290	47	16	34.0
Animal caretaker (Med)	1,333	98	1	1.0
Buyer, Agricultural produce	327	23	4	17.4
Campground caretaker	236	15	3	20.0
Dairy plant worker	7,468	121	17	14.0
Mechanic I	1,363	72	15	20.8
Equipment operator	2,080	83	9	10.8
Feedstore or mill helper	349	59	24	40.7
Floral designer	906	37	10	27.0
Foreman	1,685	76	9	11.8
Greenskeeper II	376	45	10	22.2
Groomer (horse, etc.)	487	46	4	8.7
Groundskeeper	937	41	7	17.1
Kennelman	438	52	10	19.2
Laborer, landscape	2,913	89	8	9.0
Landscape gardener	719	32	0	0.00
Logger - all-round	91	17	7	41.2
Nurseryman	375	21	1	4.8
Packer, agricultural produce	301	28	1	3.6
Salesman, driver	4,671	239	14	5.9
Salesman, farm & garden equipment & supplies	981	24	1	4.2
Sales clerk, flowers	393	22	2	9.1
Sales clerk, general	668	54	14	25.9
Sales person, lawn & garden equipment & supplies	135	54	12	22.2
Tree surgeon	508	24	11	45.8
Tree surgeon, helper	469	23	4	17.5
Truck driver, heavy	625	7	1	14.3
Truck driver, light	1,722	132	46	34.8

FINDINGS

Employment

Department of Labor records for the spring quarter of 1966 list a total of 7,318 off-farm agricultural employers for the 17 Industrial Classifications studied. Projections based on employer data indicate that there were 38,520 off-farm agricultural workers in entry job titles at that time. The calculated ranges of employee numbers for both full and part-time employees appear in Appendix D.*

Employers anticipate a net increase (new positions minus abolished positions: 4,242-2,222) of 2,020 off-farm entry level jobs by 1970. The majority of the decreases are attributed to fewer positions in the fluid milk industry which is one of the larger employers of workers. This is illustrated in Table V.

TABLE V. PROJECTED NUMBER OF FULL-TIME AGRICULTURAL JOBS, BY STANDARD INDUSTRIAL CLASSIFICATION FOR 1966, PERCENTAGE ESTIMATES FOR 1971, AND EMPLOYEE ESTIMATES FOR 1971

SIC Code	Firm Code Name	Projected Number of Employees 1966	Projected* Percent Increase or Decrease of Employees 1971	Increase or* Decrease in Jobs 1971
2026	Fluid milk industry	17,585	- 9.4	-1,653
0731	Horticultural services	7,640	30.1	2,300
5992	Florists	2,658	23.7	630
7948	Race tracks	2,262	-20.3	- 461
5962	Hay, grain, and feed stores	1,914	1.2	24
5252	Farm equipment dealers	1,711	22.7	389
7947	Private golf clubs	1,012	30.8	312
5969	Farm and garden supply	782	10.2	80
0722	Offices of veterinarians	675	36.5	247
7032	Recreational camps	513	- 3.3	- 17
0192	Horticultural specialties	491	29.9	147
0729	Animal services n.c.e.	479	- 8.9	- 43
2411	Logging camps	277	-17.3	- 48
7942	Public golf courses	133	27.0	36
0193	Animal specialties	132	21.2	28
0719	Agricultural services n.c.e.	131	33.5	45
0715	Vegetable industries	126	3.1	4
	TOTALS	38,521		2,020

*Projected increases or decreases are based on employer estimates for 1971.

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*Raw data by S. I. C. Code are presented in Appendix E.

Anticipated needs for specific industries suggest a growth in horticultural manpower of approximately 3,500 for the job titles studied. This figure is conservative and likely an underestimate due to the selective sample used in the survey which excluded municipal, state, and federal employees from the study universe. One disturbing aspect of the employer projections is the rather static appearing situation in terms of employee numbers in the conservation and recreation areas through 1971. Private employers view the future with guarded pessimism. Perhaps if the various government operations, and their expanding public services in outdoor recreation, could be catalogued, the employment picture might be quite different. In addition it should be mentioned that many firms who employ these types of workers (e.g. lumber mills, pulp operations) escape the S. I. C. Classification due to the fact that their major incomes are derived from other than logging and/or the outdoor recreation industries.* The anticipated growth in employment by private and public golf courses (growth rates of 30 and 27 percent respectively) suggests that employment in the area of outdoor recreation is increasing. These data reflect a somewhat different expansion rate than the projections for employment by recreational camps. A more detailed employee analysis is called for in this area; especially that which would include the combined government services.

The design and creation of training programs for part-time employees--even though these jobs might lead to full-time employment--is a difficult proposition. However, if longitudinal studies were to illustrate that significant numbers of part-time employees do enter full-time employment in the same general job title area, then this segment of manpower would justifiably be included in the audience to be served by instructional programs.

Age of Firms Employing Entry Level Employees

The majority of New York State employers of off-farm agricultural workers are relatively "old age firms." Eighty-four percent of the firms have been established for six or more years. Included among those S. I. C. Codes where a substantial number of firms (20 percent plus) are younger than six years old are found several of the expanding areas of employment. Anticipated growth in employee numbers exceeds 25 percent through the year 1971 in Horticultural Services, Public Golf Courses, and Horticultural Specialties. With the exception of the offices of Veterinarians it appears that as the percentage of older firms within an S. I. C. group increases the optimism toward hiring more employees decreases.

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*The study population was derived from Labor Department Standard Industrial Classification of Employers.

TABLE VI. AGE OF AGRICULTURAL BUSINESSES STUDIED

SIC Code	Agricultural Industry	Number	Age of Business					
			One Year	Two Years	Three Years	Four Years	Five Years	6 or more Years
0192	Horticultural specialties	24	1			2	2	19
0193	Animal specialties	20		1	3	1		15
0715	Contr. sorting, grading & packing & shipping fruits & vegetables for the grower	9					2	7
0719	Agri. serv. not elsewhere classified	23	1	1	1	1	2	17
0722	Offices of vets and animal hospitals	65	1	3		4	4	53
0729	Animal husbandry services, not elsewhere classified	40	1	3	4	3	3	26
0731	Horticultural services	50	2	2	1	2	6	37
2026	Fluid milk	59			1	1	1	56
2411	Logging camps & logging contractors	33	1	1			1	30
5252	Farm equipment dealers	50	1	1	1	1		46
5962	Hay, grain and feed stores	68		1	1		1	65
5969	Farm & garden supp. stores, not elsewhere classified	49		1		1	5	42
5992	Florists	55			1		1	54
7032	Sporting & recreational camps	48	1	2	1		1	43
7942	Public golf courses	34	3	2	5	1	2	21
7947	Golf clubs and country clubs	53	1	1	1		3	47
7948	Race track operator, including racing stables	44		1	4	4	4	31
TOTALS	(Percentage Distribution)	724	(1.7)	(2.7)	(3.3)	(2.9)	(5.2)	(84.2)

Manpower Requirement at the Entry Level

One out of ten workers identified by employers was classed in the 20 years of age or younger category. The relatively large proportion of "older" employees in the fluid milk industry tends to reduce the total percentage of employees under 20 or younger. Excluding the fluid milk industry, 15 to 20 percent of the total number of employees can be categorized as entry age. With the exception of the fluid milk industry, 20 percent of the job positions are filled from employee stock from outside of the hiring firm.

Utilizing 1966 as an indicator year we find that in New York State a 15 percent turnover of employees generally exists with one-fifth of the replacements being hired from the 20 years or younger employee category. This would result in three percent of the labor force being replaced annually by employees in the entry age category. However, current data provide no information regarding "double accounting," i.e. employees who move laterally between firms, but in the same job title.

Sources for entry level positions actually stem from two areas: (1) the creation of new positions over those abolished, which are filled by entry employees:

$$x_1 = N - A \cdot P$$

N = Total New Positions
A = Total Abolished Positions
P = Proportion of Positions Held by Employees in the 20 Year Old or Younger Category

and (2) replacement positions created by change of jobs, retirement, death, etc., which are filled by entry employees:

$$x_2 = R \cdot P$$

R = Total Replacements Anticipated or Required
P = Proportion of Positions Held by Employees in the 20 Year Old or Younger Category

Based on data obtained, source one for new positions will yield:

$$x_1 = 4{,}242 - 2{,}222 = 2{,}020 \cdot 20$$

$$x_1 = 404$$

and source two (replacement) will yield:

$$x_2 = (5{,}778 \cdot 5)^* = 28{,}890 \cdot .20$$

$$x_2 = 5{,}778$$

---

*Replacement for five years @ 15%/year. See comments by W. N. T. Roberts regarding problems encountered in similar manpower projections for agricultural manpower in European studies; "Organization for Economic Cooperation and Development," Trained Manpower for Tomorrow's Agriculture (Paris: O.E.C.D., 1966) pp. 216-17.

TABLE VII. INCLUSIVE EMPLOYEE DATA AS REPORTED BY EMPLOYERS*

SIC Code	Agricultural Industry	Number Employees Per Industry		Percent of Full-Time Employees		
		Full-Time	Part-Time	20 Years Old or Younger	In Present Job Title Less Than One Year	Hired From Outside Firm
0192	Horticultural specialties	124	133	14	23	17
0193	Animal specialties	73	74	13	24	38
0715	Contract sorting, grading, packing, shipping fruits & vegetables for the grower	91	91	6	26	16
0719	Agricultural services, not elsewhere classified	69	70	14	46	29
0722	Offices of veterinarians and animal hospitals	130	140	29	24	9
0729	Animal husbandry services, not elsewhere classified	73	112	22	33	66
0731	Horticultural services	188	201	23	26	43
2026	Fluid milk	1,615	1,686	2	8	8
2411	Logging camps & logging contractors	74	84	17	17	59
5252	Farm equipment dealers	169	197	16	16	18
5962	Hay, grain, and feed stores	367	379	16	16	14
5969	Farm & garden supply stores, not elsewhere classified	174	190	17	15	17
5992	Florists	138	141	15	19	13
7032	Sporting and recreational camps	302	329	20	17	15
7942	Public golf courses	88	88	31	30	21
7947	Golf clubs and country clubs	219	220	15	14	25
7948	Race track operation, indluding racing stables	292	367	10	23	34
TOTALS		4,186	4,502	567	742	829
				11.2**	13.1**	16.4**

*Includes Agricultural and Non-Agricultural Employees

**Percentage of Total Full-Time Employees for all S. I. C. Categories Studied

Based on the job titles and industries studied, these calculations indicate a demand for 6,182 job positions to be filled by employee stock from the 20 years or younger pool. However, in practical terms it is to be expected that a certain (unknown) percentage of the replacement employees will migrate laterally and vertically within the universe of off-farm agricultural occupations. This phenomenon incorporates an intrinsic error factor in replacement projections unless a correction factor based on actual migration (within or in-out-and back in these positions) can be added to the manpower equation. To what extent the 16.4 percent of the total employees hired were obtained from outside the employing firm affects the replacement equation is unknown.

There are several basic questions to be answered regarding the replacement demands for employees. Undoubtedly a portion of the projected employee turnover of 38,521 will be satisfied by young employees. However, it is conjecture as to whether the 7,704 employee figure is an under or over projection of the actual demand.

Incorporation of off-farm agricultural manpower statistics from government agencies at all levels would increase the demand in total. And these government employees must be counted among those off-farm agricultural employees who will need agricultural training.

Off-Farm Agricultural Job Titles Identified

The 1965 edition of the Dictionary of Occupational Titles provided the source for the selection of approximately 280 off-farm job titles included in the employer questionnaire. The complex of possible job titles includes more than those titles selected for study. However, it should be understood that the titles had to meet two pre-conditions: (1) be of entry level, i.e. from secondary school education and training and (2) be applicable to New York State.

A total of 92 different off-farm agricultural job titles were identified as "active" in the spring of 1966.* A list of these titles appears as Appendix C. The 28 leading job titles (in terms of numbers of employees) appear in Table VIII. Of the 92 job titles identified 30 percent (27) had projections of 100 or more employees. Even though the job titles selected for task analysis appear to meet the operational definitions of the survey, three of the five titles projecting the greatest number of workers might be questioned in terms of definition.

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*Several job titles were added by employers in addition to those listed on the employer questionnaire.

TABLE VIII. NUMBER OF FULL-TIME JOBS, PROJECTED-- NEW YORK STATE FOR 28 SELECTED JOB TITLES

D.O.T. Number	Job Title	Mean Estimate** 1966	Mean Estimate** 1971
419.884	Animal caretaker	290	396
419.884	Animal caretaker (Medical)	1,333	1,276 -
162.158	Buyer, Agricultural produce	327	388
407.887	Campground caretaker	236	203 -
529.886	Dairy plant worker (Dairy Helper)	7,468	6,811 -
409.883	Equipment operator, Farm	2,080	2,483
520.886	Feedstore or mill helper	349	279 -
142.081	Floral designer	906	1,061
	Foreman*	1,685	1,642 -
407.883	Greenskeeper II	376	419
356.874	Groomer (horse, etc.)	487	405 -
407.884	Groundskeeper	937	1,010
356.874	Kennelman	438	593
407.887	Labor, landscape	2,913	3,586
407.181	Landscape gardener	719	935
940.884	Logger - all-round	91	95
624.281	Mechanic I, Farm equipment	1,363	1,569
406.168	Nurseryman	375	138 -
920.887	Packer, Agricultural produce	301	341
292.358	Salesman, driver	4,671	3,656 -
277.358	Salesman, farm & garden equipment & supplies	981	1,154
260.458	Sales clerk, flowers	393	451
289.458	Sales clerk, general	668	668
277.358	Sales person, lawn & garden equipment & supplies	135	135
409.181	Tree surgeon	508	867
409.884	Tree surgeon, helper	469	718
905.883	Truck driver, heavy	625	637
906.883	Truck driver, light	1,722	2,186
	Totals	33,203	34,562

*Description for Foreman (any ind.) was used for this title and carrys no D. O. T. number. See Page 294, Dictionary of Occupational Titles, Volume I, 1965.

**Ranges represent one standard deviation above and below the mean at the 95 percent confidence level. The minus symbol indicates a five-year estimated decrease in demand for the job title.

Tasks Performed

Seventy-two of the job tasks reported as being performed by employees were identified as being performed in two or more job titles. These tasks which represent the "common thread" or "core" activities are listed in Appendix E. There were seven tasks which were being performed in six or more different job titles. For illustrative purposes these tasks are portrayed in Table IX.

Assuming that the limited returns on the task analysis questionnaire are not overly biased, these data support the concept of "core" or "common thread" tasks among various job titles. For example the task of "estimating merchandise quality" was found in ten different job titles ranging from Buyer, agricultural produce, to Truck driver, light, within the 17 Standard Industrial Classifications sampled. When the task was performed, it occupied, on the average, 34 percent of the time of the employee. And 29 percent of the employees performing the task of estimating merchandise quality indicated it was the most difficult task to "learn" of all the tasks they performed in their respective job titles. Similar statistical data is available for each of 72 tasks listed in Appendix D.

Job Task Analysis

The 16 percent response to the employee questionnaire, which was to facilitate job task analysis for the 28 job titles selected for analysis, eliminated the practical possibility of compiling completely unbiased findings. See Appendix B for the task analysis questionnaire form. In lieu of compiling a job profile for each of the 28 job titles selected for study, it was decided to trace the "core" or "common thread" tasks across the various job titles. By following this tack it was hoped that at least a portion of survey objectives dealing with job specifications (duties and responsibilities) and common tasks could be attained.

TABLE IX. FREQUENCY OF TASK PERFORMANCE BY JOB TITLE, AVERAGE PERCENT OF TIME SPENT PER TASK, AND THE PERCENTAGE OF TIME THE TASK WAS CONSIDERED THE MOST DIFFICULT TO LEARN*

Task	Number of Job Titles In Which Performed	The Average Percentage of Time Spent per Job Title When Task Performed	Percent of Time Indicated the MOST DIFFICULT Task to Learn on the Job
1. Estimating merchandise quality for customer needs	10	34	29
2. Servicing and/or maintaining equipment	9	17	29
3. General office work	8	35	9
4. Janitorial, general clean up	7	12	-
5. Setting up displays of merchandise	6	8	34
6. Driving truck	6	39	11
7. Fertilizing lawns, trees, etc. with power equipment	6	16	38

*These tasks have been extracted from Appendix D.

EXAMPLE

Identified in the Following Job Titles

Task:
ESTIMATING MERCHANDISE FOR CUSTOMERS

1. Buyer, agri. produce
2. Feedmill helper
3. Floral designer
4. Mechanic
5. Sales clerk, flowers
6. Sales clerk, general
7. Salesman-driver
8. Salesman, feed and garden supply
9. Sales person, lawn and garden supply
10. Truck driver, light

Task:
SERVICING & MAINTAINING EQUIPMENT

1. Campground caretaker
2. Equipment operator
3. Feed store, mill helper
4. Greenskeeper
5. Groundskeeper
6. Kennelman
7. Laborer, landscape
8. Logger, all-round
9. Mechanic, I

Task:
GENERAL OFFICE WORK

1. Animal caretaker
2. Buyer, agri. produce
3. Dairy plant worker
4. Feedstore, mill helper
5. Floral designer
6. Kennelman
7. Sales clerk, general
8. Sales person, feed and garden supply

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This study was an attempt to:

(1) Ascertain the number of off-farm agricultural jobs, at the entry level, in New York State by specific job titles.

(2) Provide an analysis of the job titles identified with implications for curriculum development.

The overall study was limited to the employer universe as framed by the New York State Department of Labor, i.e., their employer listing by Standard Industrial Classification. This procedure placed the federal, state, and municipal employers outside of the employer sample.

In general the first objective was fulfilled by virtue of a 70 percent return of the employer survey questionnaire. The second objective was only partially fulfilled due to poor employee responses to the mailed questionnaire. However, job analysis data which were retrieved support the concept of common or core tasks with implications for curricular development. Specifically the findings of the study are as follows:

1. There is no one single source or listing of employers, private and federal, currently available for use in manpower projection studies in agriculture. The U. S. Department of Labor records, within each state, provide the single most universal census of private employers (1966).

2. In New York State in 1966 there were 38,521 projected off-farm agricultural entry level jobs in private industry. There is an anticipated overall growth in employee numbers through 1971 of 5.2 percent or an increase from 38,521 to 40,541 employees for those 17 Standard Industrial Classifications studied.

3. Projected increases in new job positions are greatest in the general area of horticultural services. Decreases in employee numbers are anticipated in the Industrial Classifications of: fluid milk industry, race tracks, logging camps, and animal services not classified elsewhere.

4. The majority (84 percent) of the off-farm agricultural employers have been in business six or more years.

5. Approximately 20 percent of the off-farm agricultural employees (excluding the fluid milk industry which is 2 percent) are in the age category of 20 years or younger.

6. Job position turnover rates range from 14 to 46 percent (again excluding the fluid milk industry which is 8 percent).

7. Projected off-farm agricultural manpower demands for entry level employees (excluding public employment) through 1971 is for 6,182 employees. This represents filling 404 newly created positions and 5,778 replacement positions.

8. Ninety-two different entry level, off-farm agricultural job titles were identified by New York State employers in the S. I. C. industries included for study (per D. O. T. job title designation). Manpower projections for 27 of these job titles indicated 100 or more employees. Dairy plant workers, salesman drivers, and landscape laborers were the three job titles with the greatest number of employees.

9. Seventy-two of the job tasks identified were performed in two or more different job titles (based on a 16 percent sample return).

10. Based on minimum returns it appears that the concept of common or core tasks which "cut across" several different job titles is a reality. Fourteen tasks were identified which were common to five or more different job titles.

Implications

The following implications are based upon the data gathered and the general findings of the study:

1. Existing Department of Labor records, i.e., lists are the most complete and inclusive source for identifying agricultural employers in the non-public economic sector.

2. New occupational education programs in agriculture are well founded because there is a need for manpower to fill entry level off-farm agricultural occupations.

3. Preliminary data suggest that "common thread" or "core" tasks do exist among differing job titles. These common tasks can be identified and may well serve as a basic core to training programs in off-farm agricultural occupations.

4. The definition of what constitutes an off-farm agricultural occupation needs clarification. Only cursory task analysis of certain occupations suggests that training needs "cut across" several traditional or previously established vocational service areas.

5. Mailed questionnaires do not seem to provide enough data to carry out complete employee task analysis. At least two remaining possibilities might be considered in collecting data such as

these (and both are costly): (a) employee-employer interviews, and (b) time and motion study of employees in their working environment.

6. There will be an increasing and changing demand for agricultural workers in New York State which warrants continued study as economic and social changes occur.

Recommendations

1. The term "off-farm agricultural occupation" requires a practical definition--one which will facilitate clearer understanding and coordination in agricultural manpower studies and curriculum development.

2. Attention should be directed to the determination of the number and nature of employees engaged by "public" employers in the area of off-farm agricultural enterprises. And in addition it is suggested that a representative census be made of all Standard Industrial Classifications to ascertain the number of employees in firms where the primary business is something other than agricultural. In any case it is recommended that manpower projections be based on macro-manpower studies rather than micro-individual industry efforts.

3. Consideration should be given to developing employee profiles. Such profiles coupled with task analysis information would yield migration--job change data. Such information would be helpful in projecting manpower needs.

4. A comprehensive and continuing study should be initiated on the basis of personal employee interviews for the purpose of completing job title task analysis for the broad spectrum of agricultural occupations. If such a study were comprehensive in nature and designed to re-examine the employment situation regularly, it would provide formative curriculum data and facilitate a swift and accurate means to curriculum updating.

5. Exploration is needed to seek ways for translating task analysis information into curricular content. Because "common thread" or "core" tasks do exist, curricular priorities can be determined and training can focus on job "clusters" rather than individual titles. But it is essential that curriculum planners be able to design curricula based on realistic occupational demands.

APPENDICES

A. Employer Questionnaire

B. Employee Questionnaire

C. Off-Farm Entry Level Job Titles Identified

D. Projected Number of Full-Time and Part-Time Off-Farm Entry Level Jobs

E. Frequency of Task Performance by Job Title

F. Number of Employees by S. I. C.--One Year Ago, Present, and Five Years Hence (Raw Data)

G. Employee Data for 17 Standard Industrial Classifications

APPENDIX A

SCHEDULE 01 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE HORTICULTURAL SPECIALTIES INDUSTRY, 1966

I. Identification:

Name of firm ____________________ Address ____________________

Your name ____________________ Your job title ____________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Farms, horticultural specialty
____ Florists greens, cultivated: growing of
____ Flowers, growing of
____ Fruit stocks, growing of
____ Greenhouses
____ Herb farms
____ Horticultural specialties
____ Hothouses
____ Mushroom cellars
____ Nut stocks, growing of
____ Peppermint, growing of
____ Plants, ornamental: growing of
____ Plants, potted: growing of
____ Seed, flower & vegetable: growing of
____ Shrubberies, growing of
____ Sod crops

Other: ____________________

Average number of employees during past year: Full-time ____; Part-time ____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Horticultural Specialties portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example: Salesman		4	1	3	0	5	3	1	0	2	0	1	0
275	Budder												
49	Christmas tree cutter												
67	Mechanic												
69	Mechanic helper												
70	Equipment operator												
71	Foreman												
78	Farm hand												
276	Floral designer												
101	Flower grower												
121	Greenskeeper												
156	Landscape gardener												
173	Mushroom grower												
174	Nurseryman												
175	Nursery, worker												
176	Orchardist												
208	Salesman												
214	Sales clerk												
223	Seed grower												
256	Tree surgeon												
257	Tree surgeon, helper												
263	Truck driver												
262	Truck driver, helper												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 02 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE ANIMAL SPECIALTIES INDUSTRY, 1966

I. Identification:

Name of firm ____________________ Address ____________________

Your name ____________________ Your job title ____________________

Check the age of your business (Check One)

____ 1 year

____ 2 years

____ 3 years

____ 4 years

____ 5 years

____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Apearies

____ Animal specialty farms

____ Chinchilla farms

____ Dog farm

____ Fox farms

____ Game farms (fur bearing animals)

____ Horse farms

____ Kennels, commercial

____ Mink farms

____ Rabbit farms

____ Rattlesnake farms

Other: ____________________

Average number of employees during past year: Full-time ____; Part-time ____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Animal Specialties portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
4	Animal breeder												
21	Beekeeper												
5	Animal caretaker												
67	Mechanic												
69	Mechanic, helper												
70	Equipment operator												
71	Foreman												
78	Farm hand												
11	Fur farmer												
14	Gamekeeper												
38	Horeseshoer												
39	Horse trainer												
45	Instructor, riding												
48	Kennelman												
202	Reptile farmer												
10	Salesman												
18	Sales clerk												
236	Stable man												
263	Truck driver												
262	Truck driver, helper												
270	Worm grower												
ther job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 03 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE CONTRACT SORTING, GRADING AND PACKING INDUSTRY, 1966

I. Identification:

Name of firm ______________________________ Address ________________________

Your name ______________________________ Your job title ________________________

Check the age of your business (Check One)

____ 1 year

____ 2 years

____ 3 years

____ 4 years

____ 5 years

____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Fruit sorting, grading & packing

____ Packaging fruits & vegetables, contract

____ Potato curing, contract

____ Vegetable sorting, grading & packing: contract

Other: ______________________________

Average number of employees during past year: Full-time ____; Part-time ____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Contract Sorting, Grading & Packing portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired frc outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
9	Apple packing header												
41	Grader, vegetable												
67	Mechanic												
69	Mechanic, helper												
70	Equipment operator												
71	Foreman												
78	Farm hand												
274	Field checker												
177	Packer												
208	Salesman												
232	Sorter, agricultural produce												
263	Truck driver												
262	Truck driver, helper												
266	Washer, agricultural produce												
267	Weigher												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 04 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE AGRICULTURAL SERVICES INDUSTRY, 1966

I. Identification:

Name of firm ______________________ Address ______________________

Your name ______________________ Your job title ______________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Auctioning livestock
____ Crop dusting, contract
____ Crop spraying, contract
____ Farm management contract
____ Fruit pre-cooling, not connected with transportation
____ Grain cleaning, contract
____ Grain trimming, connected with agriculture
____ Harvesting contract
____ Hauling & spreading lime, contract
____ Picking of fruits & vegetables
____ Pre-cooling fruits & veg. not connected with transportation
____ Tillage contract
____ Veg. pre-cooling, not connected with transportation

Other: ______________________

Average number of employees during past year: Full-time ____; Part-time ____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Agricultural Services portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fr outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Par tim
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
1	Aerial applicator, pilot												
5	Animal caretaker												
3	Airplane pilot, helper												
12	Auctioneer												
41	Grader												
49	Christmas tree cutter												
50	Commission man, agri. produce												
67	Mechanic												
69	Mechanic, helper												
70	Equip. oper.(tractor driver,etc)												
71	Foreman												
78	Farm hand												
92	Fence erector												
95	Field hauler												
96	Field man												
240	Grain man												
146	Irrigator, sprinkling												
266	Washer, agri. produce												
176	Orchardist												
177	Packer, agri. produce												
233	Sprayer												
274	Field Checker												
255	Tree pruner												
256	Tree surgeon												
257	Tree surgeon, helper												
263	Truck driver												
262	Truck driver, helper												
267	Weigher												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 05 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE HORTICULTURAL SERVICES INDUSTRY, 1966

I. Identification:

Name of firm ____________________ Address ____________________

Your name ____________________ Your job title ____________________

Check the age of your business (Check One)

_____ 1 year
_____ 2 years
_____ 3 years
_____ 4 years
_____ 5 years
_____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

_____ Arborist services
_____ Garden maintenance
_____ Garden planning
_____ Horticultural advisory or counseling services
_____ Horticultural services
_____ Landscape architects
_____ Landscape contracting
_____ Landscape gardening
_____ Utility line tree trimming services

Other: ____________________

Average number of employees during past year: Full-time _____; Part-time _____. If you do not hire any employees, check here _____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Horticultural Services portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B=		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fr outside of fir in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example: Salesman		4	1	3	0	5	3	1	0	2	0	1	0
70	Equipment operator												
71	Foreman												
127	Greenskeeper												
128	Grounds keeper												
150	Landscape gardener												
151	Laborer, landscape												
68	Mechanic												
69	Mechanic, helper												
174	Nurseryman												
175	Nursery worker												
208	Salesman												
215	Sales clerk												
256	Tree surgeon												
257	Tree surgeon, helper												
258	Tree trimmer												
259	Tree trimmer, ground man												
263	Truck driver												
262	Truck driver, helper												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 06 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE FLUID MILK INDUSTRY, 1966

I. Identification:

Name of firm ______________________ **Address** ______________________

Your name ______________________ **Your job title** ______________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Fluid milk industry

Other: ______________________

Average number of employees during past year: Full-time____; Part-time____. If you do not hire any employees, check here____and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Fluid Milk Industry portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fr outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
55	Dairy plant worker												
70	Equipment operator												
57	Dairy tester												
71	Foreman												
67	Mechanic												
69	Mechanic, helper												
169	Milk receiver												
171	Milk sampler												
215	Sales clerk												
206	Salesman, driver												
207	Salesman, driver helper												
263	Truck driver												
262	Truck driver, helper												
276	Truck driver, bulktank												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 07 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE OFFICES OF VETERINARIANS & ANIMAL HOSPITALS INDUSTRY, 1966

I. Identification:

Name of firm ______________________________ Address ______________________________

Your name ______________________________ Your job title ______________________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Animal hospitals & other veterinary services
____ Kennels, boarding
____ Offices of veterinarians
Other: ______________________________

Average number of employees during past year: Full-time____; Part-time____. If you do not hire any employees, check here____and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Offices of Veterinarians & Animal Hospitals portion of your business

Code No.	Selected job title in un-skilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired f outside of fir in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman												
5	Animal caretaker												
63	Dog trainer												
148	Kennelman												
149	Laboratory Technician, veterinary												
263	Truck driver												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 08 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE ANIMAL HUSBANDRY SERVICES INDUSTRY, 1966

I. Identification:

Name of firm ______________________________ Address ______________________________

Your name ______________________________ Your job title ______________________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Animal breeding
____ Artificial insemination service
____ Boarding or training horses
____ Cattle feed-lot operation
____ Horses, boarding or training
____ Pedigree record services
____ Worm raising and gathering
Other: ______________________________

Average number of employees during past year: Full-time____; Part-time____. If you do not hire any employees, check here____and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Animal Husbandry Services portion of your business

Code No.	Selected job title in un-skilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fr outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
10	Artificial breeding technician												
11	Artificial inseminator												
33	Buyer												
45	Chicken sexer												
70	Equipment operator												
71	Foreman												
78	Farm hand												
240	Grain man												
138	Horseshoer												
139	Horse trainer												
145	Instructor, riding												
148	Kennelman												
67	Mechanic												
69	Mechanic helper												
210	Salesman												
263	Truck driver												
262	Truck driver, helper												
270	Worm grower												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 09 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE LOGGING CAMPS INDUSTRY, 1966

I. Identification:

Name of firm ______________________ Address ______________________

Your name ______________________ Your job title ______________________

Check the age of your business (Check One)

_____ 1 year
_____ 2 years
_____ 3 years
_____ 4 years
_____ 5 years
_____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

_____ Logging camps & logging contractors

Other: ______________________

Average number of employees during past year: Full-time_____; Part-time_____. If you do not hire any employees, check here _____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Logging Camps & Contractors portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
26	Bucker, logging												
28	Buck swamper												
34	Buyer												
47	Chief Cruiser												
70	Equipment operator												
100	Fire warden												
71	Foreman												
106	Fire fighter												
135	Hook tender												
159	Logger, all-round												
162	Logging operations inspector												
163	Log grader												
67	Mechanic												
69	Mechanic helper												
261	Truck driver, heavy												
262	Truck driver, helper												
263	Truck driver, light												
273	Yardman												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 10 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE FARM EQUIPMENT DEALERS INDUSTRY, 1966

I. Identification:

Name of firm ______________________________ Address ______________________________

Your name ______________________________ Your job title ______________________________

Check the age of your business (Check One)

_____ 1 year

_____ 2 years

_____ 3 years

_____ 4 years

_____ 5 years

_____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

_____ Dairy equipment dealers, retail

_____ Farm equipment dealers, retail

_____ Harvesting machinery dealers, retail

_____ Haying machinery dealers, retail

_____ Lawn mowers, retail

_____ Planting machinery dealers, retail

_____ Tractor (farm) dealers, retail

Other: ______________________________

Average number of employees during past year: Full-time_____; Part-time _____. If you do not hire any employees, check here _____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Farm Equipment Dealers portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
58	Diesel Mechanic												
70	Equipment operator												
87	Farm machinery set-up man												
71	Foreman												
67	Mechanic												
69	Mechanic, helper												
179	Painter												
185	Parts order clerk												
208	Salesman												
217	Sales clerk, parts												
224	Service manager												
261	Truck driver, heavy												
262	Truck driver, helper												
263	Truck driver, light												
277	Welder												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 11 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE HAY, GRAIN & FEED STORES INDUSTRY, 1966

I. Identification:

Name of firm ______________________ Address ______________________

Your name ______________________ Your job title ______________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Hay, Grain & Feed Stores

Other: ______________________

Average number of employees during past year: Full-time____; Part-time____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Hay, Grain & Feed Stores portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fro outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
31	Buyer												
70	Equipment operator												
96	Field man												
71	Foreman												
278	Feed store or mill helper												
67	Mechanic												
69	Mechanic, helper												
206	Salesman, driver												
209	Salesman												
215	Sales clerk												
261	Truck driver, heavy												
262	Truck driver, helper												
263	Truck driver, light												
240	Grain man												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 12 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE FARM & GARDEN SUPPLY STORES INDUSTRY, 1966

I. Identification:

Name of firm ______________________ Address ______________________

Your name ______________________ Your job title ______________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Bulbs, seeds, and nursery stock, retail
____ Farm supplies & tools, retail
____ Fertilizer, retail
____ Garden supplies and tools, retail
____ Harness equipment, retail
____ Harness made to individual order
____ Irrigation equipment, retail
____ Top soil, retail
Other: ______________________

Average number of employees during past year: Full-time____; Part-time____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Farm & Garden Supply Stores portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired frc outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
70	Equipment operator												
87	Equipment set-up man												
71	Foreman												
131	Leather craftsman												
138	Horse shoer												
154	Laborer, farm & garden stores												
67	Mechanic												
69	Mechanic helper												
174	Nurseryman												
208	Salesman												
216	Sales clerk												
261	Truck driver, heavy												
262	Truck driver, helper												
263	Truck driver, light												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 13 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE FLORISTS INDUSTRY, 1966

I. Identification:

Name of firm ______________________ Address ______________________

Your name ______________________ Your job title ______________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Florists, retail

Other: ______________________

Average number of employees during past year: Full-time ____; Part-time ____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Florists portion of your business.

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fro outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
31	Buyer												
276	Floral designer												
71	Foreman												
[illegible]	Greenhouse worker												
175	Nursery worker												
214	Sales clerk												
263	Truck driver, light												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 14 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE SPORTING & RECREATIONAL CAMPS INDUSTRY, 1966

I. Identification:

Name of firm ____________________ Address ____________________

Your name ____________________ Your job title ____________________

Check the age of your business (Check One)

____ 1 year
____ 2 years
____ 3 years
____ 4 years
____ 5 years
____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Boys camps
____ Camps, sporting & recreational
____ Fishing camps
____ Girls camps
____ Hunting camps
Other: ____________________

Average number of employees during past year: Full-time ____; Part-time ____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Sporting & Recreational Camps portion of your business

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fro outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman												
38	Camp attendant												
39	Camp ground caretaker												
70	Equipment operator												
122	Greens keeper												
141	Hunting & fishing guide												
67	Mechanic												
263	Truck driver, light												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 15 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE PUBLIC GOLF COURSES INDUSTRY, 1966

1. Identification:

Name of firm ____________________ Address ____________________

Your name ____________________ Your job title ____________________

Check the age of your business (Check One) ____ 1 year ____ 4 years

____ 2 years ____ 5 years

____ 3 years ____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Golf courses, public: operation of Other: ____________________

Average number of employees during past year: Full-time ____; Part-time ____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Public Golf Courses portion of your business.

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fr outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example:	Salesman	4	1	3	0	5	3	1	0	2	0	1	0
70	Equipment operator												
122	Greenskeeper												
128	Groundskeeper												
151	Laborer, Golf Course												
156	Landscape, Gardener												
67	Mechanic												
263	Truck driver, light												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 16 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE GOLF CLUBS & COUNTRY CLUBS INDUSTRY, 1966

I. Identification:

Name of firm ____________________ Address ____________________

Your name ____________________ Your job title ____________________

Check the age of your business (Check One)

____ 1 year ____ 4 years

____ 2 years ____ 5 years

____ 3 years ____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

____ Country clubs Other: ____________________

____ Golf clubs

Average number of employees during past year: Full-time ____; Part-time ____. If you do not hire any employees, check here ____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Golf Clubs and Country Clubs portion of your business.

ode o.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fro outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
xample: Salesman		4	1	3	0	5	3	1	0	2	0	1	0
70	Equipment Operator												
22	Greenskeeper												
38	Groundskeeper												
51	Laborer, Golf Course												
56	Landscape, gardener												
67	Mechanic												
63	Truck Driver, light												
ther job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

SCHEDULE 17 - EMPLOYMENT OPPORTUNITIES SURVEY OF THE RACE TRACK OPERATION INDUSTRY, 1966

I. Identification:

Name of firm ______________________ Address ______________________

Your name ______________________ Your job title ______________________

Check the age of your business (Check One) _____ 1 year _____ 4 years

_____ 2 years _____ 5 years

_____ 3 years _____ 6 or more years

Check one item below which most nearly describes your type of business. These items are used by the New York State Labor Department. If none apply, record your type of business under "other".

_____ Race horse owners

_____ Race track operation: horse, dog, automobile, motorcycle, etc.

_____ Racing stables

_____ Speedway operation

Other: ______________________

Average number of employees during past year: Full-time_____; Part-time_____. If you do not hire any employees, check here _____ and return this form without proceeding any further.

II. Information concerning employees in selected job titles in your firm

Directions: For each type of job title listed, please supply the correct number in the columns provided for employees in the Race Track Operation portion of your business.

Code No.	Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired fro outside of firm in past year F	
		Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Example: Salesman		4	1	3	0	5	3	1	0	2	0	1	0
6	Animal caretaker												
70	Equipment operator												
128	Grounds keeper												
151	Laborer, race track												
156	Landscape, gardener												
67	Mechanic												
263	Truck driver, light												
Other job titles in unskilled, semi-skilled, skilled, service and sales occupations:													

APPENDIX B

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SCHEDULE 1 - TASK ANALYSIS OF SELECTED EMPLOYEES

Dairy Plant Worker

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate per cent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
1	1. Cleaning pipes and fittings using brushes.	% time____	
2	2. Washing bottles.	% time____	
3	3. Placing empty bottles, cans & cases on conveyor line.	% time____	
4	4. Dumping dairy products.	% time____	
5	5. Examining milk & dairy products for dirt & odor.	% time____	
6	6. Weighing products.	% time____	
7	7. Packing products with power equipment.	% time____	
8	8. Packing products by hand.	% time____	
9	9. Wrapping products by hand.	% time____	
10	10. Wrapping products with power equipment.	% time____	
127	11. Loading or unloading truck by hand	% time____	
128	12. Loading or unloading truck with power equip.	% time____	
	13. Other	% time____	
	14. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 2 - TASK ANALYSIS OF SELECTED EMPLOYEES

Salesman - Driver

DIRECTIONS

1. Record the following information:

    A. Your name ______________________________

    B. Name of firm you work for ______________________________

    C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
11	1. Writing delivery orders.	% time____	
12	2. Picking up containers and/or returned merchandise.	% time____	
13	3. Collecting for services and/or deliveries	% time____	
14	4. Stocking shelves or racks	% time____	
15	5. Setting up displays of merchandise	% time____	
16	6. Driving truck.	% time____	
127	7. Loading or unloading truck by hand.	% time____	
128	8. Loading or unloading truck with power equip.	% time____	
134	9. Calling on potential customers.	% time____	
	10. Other	% time____	
	11. Other	% time____	
	12. Other	% time	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 3 - TASK ANALYSIS OF SELECTED EMPLOYEES

Laborer, Landscape

DIRECTIONS

1. Record the following information:

   A. Your name ____________________

   B. Name of firm you work for ____________________

   C. Address of firm ____________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
17	1. Spreading and leveling soil using hand tools	% time____	
18	2. Spreading & leveling soil using power equip.	% time____	
19	3. Setting stones in gardens	% time____	
20	4. Operating wheelbarrow	% time____	
21	5. Mowing and/or trimming lawns by hand	% time____	
22	6. Mowing and/or trimming lawns using power equip.	% time____	
23	7. Mixing and pouring cement	% time____	
24	8. Planting by hand	% time____	
25	9. Planting with power equipment	% time____	
	10. Other	% time____	
	11. Other	% time____	
	12. Other	% time____	
	13. Other	% time____	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 4 - TASK ANALYSIS OF SELECTED EMPLOYEES

Foreman

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the taskslisted below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORK "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
26	1. Maintaining time & production records	% time____	
27	2. Initiating personnel actions such as promotion and discharges	% time____	
28	3. Assisting & coordinating company policy & production with various departments	% time____	
29	4. Inspecting products being produced	% time____	
30	5. Interpreting company policy to workers	% time____	
31	6. Training new workers	% time____	
32	7. Reading plans & specifications for workers	$ time____	
33	8. Motivating workers	% time____	
34	9. Enforcing safety regulations	% time____	
35	10. Studying production schedules	% time____	
36	11. Assisting workers in solving production problems	% time____	
37	12. Recommending production improvements to management.	% time____	
38	13. Requisitioning merchandise or materials	% time____	
	14. Other	% time____	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 5 - TASK ANALYSIS OF SELECTED EMPLOYEES

Equipment Operator

DIRECTIONS

1. Record the following information:

   A. Your name ____________________

   B. Name of firm you work for ____________________

   C. Address of firm ____________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
39	1. Adjusting equipment and/or machinery	% time____	
42	2. Examining machines, gasoline & diesel engines & equipment for repair or operations defect	% time____	
44	3. Lubricating machines or equipment	% time____	
82	4. Making minor repairs	% time____	
141	5. Operating equipment and/or machinery	% time____	
142	6. Servicing equipment and/or machinery	% time____	
	7. Other	% time____	
	8. Other	% time____	
	9. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 6 - TASK ANALYSIS OF SELECTED EMPLOYEES

Truck Driver

DIRECTIONS

1. Record the following information:

   A. Your name ______________________

   B. Name of firm you work for ______________________

   C. Address of firm ______________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
16	1. Driving truck	% time____	
127	2. Loading or unloading truck by hand	% time____	
128	3. Loading or unloading truck with power equip.	% time____	
129	4. Lubricating truck	% time____	
82	5. Making minor repairs	% time____	
13	6. Collecting for services and/or deliveries	% time____	
	7. Other	% time____	
	8. Other	% time____	
	9. Other	% time____	
	10. Other	% time____	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 7 - TASK ANALYSIS OF SELECTED EMPLOYEES

Equipment Mechanic

DIRECTIONS

1. Record the following information:

   A. Your name ______________________

   B. Name of firm you work for ______________________

   C. Address of firm ______________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
41	1. Assembling machines or equipment	% time____	
42	2. Examining machines, gasoline & diesel engines, & equipment for repair or operations defect	% time____	
43	3. Repairing farm structures	% time____	
44	4. Lubricating machines or equipment	% time____	
45	5. Installing or repairing electrical wiring	% time____	
46	6. Installing or repairing plumbing	% time____	
47	7. Constructing farm structures	% time____	
135	8. Replacing defective parts	% time____	
136	9. Adjusting equipment	% time____	
	10. Other	% time____	
	11. Other	% time____	
	12. Other	% time____	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 8 - TASK ANALYSIS OF SELECTED EMPLOYEES

Animal Caretaker, Medical

DIRECTIONS

1. Record the following information:

   A. Your name ______________________

   B. Name of firm you work for ______________________

   C. Address of firm ______________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
48	1. Ordering feed and supplies	% time____	
49	2. Keeping feeding records	% time____	
50	3. Weighing, measuring & preparing animals' foods	% time____	
51	4. Feeding animals	% time____	
52	5. Cleaning cages or pens	% time____	
53.	6. Removing dead animals	% time____	
54.	7. Administering anesthetics	% time____	
55.	8. Leading or carrying animals to surgery, quarters, or laboratory	% time____	
56	9. Preparing animals for surgery	% time____	
88	10. Regulating ventilation and heating	% time____	
132	11. Watering animals	% time____	
	12. Other	% time____	
	13. Other	% time____	
	14. Other	% time____	
	15. Other	% time____	
	16. Other	% time____	
	17. Other	% time____	
	18. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 9 - TASK ANALYSIS OF SELECTED EMPLOYEES

Floral Designer

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORK "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
57	1. Selecting flowers & foliage (natural or artificial) for floral work	% time____	
58	2. Painting floral products using spray equip.	% time____	
59	3. Decorating rooms (commercial buildings) and rooms (hotel)	% time____	
60	4. Designing flower arrangements, wreaths, decorations and corsages	% time____	
61	5. Constructing flower arrangements, wreaths, decorations and corsages	% time____	
	6. Other	% time____	
	7. Other	% time____	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 10 - TASK ANALYSIS OF SELECTED EMPLOYEES

Groundskeeper

DIRECTIONS

1. Record the following information:

    A. Your name ____

    B. Name of firm you work for ______________________________

    C. Address of firm ____________________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORK "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
62	1. Cleaning or maintaining grounds	% time____	
63	2. Shoveling snow	% time____	
64	3. Raking leaves and litter	% time____	
22	4. Mowing and/or trimming lawns using power tools	% time____	
21	5. Mowing and/or trimming lawns using hand tools	% time____	
65	6. Pruning	% time____	
66	7. Painting	% time____	
67	8. Repairing fences	% time____	
68	9. Spraying or dusting trees, shrubs, & flowers with insecticides, fungicides or herbicides	% time____	
69	10. Irrigating plants, lawns, shrubs & trees using hand hose	% time____	
70	11. Irrigating plants, lawns, shrubs & trees using power equipment	% time____	
24	12. Planting by hand	% time____	
25	13. Planting with power equipment	% time____	
125	14. Transplanting by hand	% time____	
126	15. Transplanting by power	% time____	
123	16. Cultivating by hand	% time____	
124	17. Cultivating with power equipment	% time____	
	18. Other	% time____	
	19. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 11 - TASK ANALYSIS OF SELECTED EMPLOYEES

Landscape Gardener

DIRECTIONS

1. Record the following information:

A. Your name ______________________________

B. Name of firm you work for ______________________________

C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORK "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Tasks Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
62	1. Cleaning or maintaining grounds	% time____	
71	2. Locating recommended plants, trees & shrubs	% time____	
72	3. Installing tile drains	% time____	
73	4. Developing contracts with various owners for work	% time____	
22	5. Mowing and/or trimming lawns using power tools	% time____	
21	6. Mowing and/or trimming lawns using hand tools	% time____	
74	7. Repairing driveways	% time____	
68	8. Spraying or dusting trees, shrubs & flowers with insecticides, fungicides, herbicides	% time____	
75	9. Fertilizing lawns, trees, shrubs & flowers by hand	% time____	
76	10. Fertilizing lawns, trees, shrubs & flowers by power	% time____	
77	11. Preparing soil for planting with power equip.	% time____	
24	12. Planting by hand	% time____	
25	13. Planting with power equipment	% time____	
78	14. Preparing soil for planting by hand	% time____	
125	15. Transplanting by hand	% time____	
126	16. Transplanting with power equipment	% time____	
123	17. Cultivating by hand	% time____	
124	18. Cultivating with power equipment	% time____	
	19. Other	% time____	
	20. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 12 - TASK ANALYSIS OF SELECTED EMPLOYEES

Salesperson, General

DIRECTIONS

1. Record the following information:

    A. Your name ____________________

    B. Name of firm you work for ____________________

    C. Address of firm ____________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
79	1. Preparing inventory of stock	% time____	
80	2. Preparing sales slips and receive payment thereof	% time____	
81	3. Obtaining credit authorizations	% time____	
38	4. Requisitioning merchandise or materials	% time____	
14	5. Stocking shelves or racks	% time____	
15	6. Setting up displays of merchandise	% time____	
83	7. Demonstrating merchandise	% time____	
84	8. Estimating merchandise quantity for customer needs	% time____	
85	9. Selling	% time____	
86	10. Advising customers as per purchases of merchandise	% time____	
	11. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 13 - TASK ANALYSIS OF SELECTED EMPLOYEES

Feedstore or Mill Helper

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
6	1. Weighing products	% time____	
14	2. Stocking shelves or racks	% time____	
85	3. Selling	% time____	
127	4. Loading or unloading truck by hand	% time____	
128	5. Loading or unloading truck with power equip.	% time____	
143	6. Tending machinery that mixes stock or poultry feeds.	% time____	
144	7. Sewing feed bags	% time____	
15	8. Setting up displays of merchandise	% time____	
	9. Other	% time____	
	10. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 14 - TASK ANALYSIS OF SELECTED EMPLOYEES

Salesman, Farm & Garden Supplies & Equipment

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
85	1. Selling	% time____	
86	2. Advising customers as per purchases of merchandise	% time____	
83	3. Demonstrating merchandise	% time____	
15	4. Setting up displays of merchandise	% time____	
130	5. Calling on customer in person or by phone	% time____	
80	6. Preparing sales slips and receive payment thereof	% time____	
	7. Other	% time____	
	8. Other	% time____	
	9. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 15 - TASK ANALYSIS OF SELECTED EMPLOYEES

Kennelman

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
40	1. Keeping breeding records	% time___	
51	2. Feeding animals	% time___	
87	3. Inspecting animals for disease or infection	% time___	
88	4. Regulating ventilation and heating	% time___	
52	5. Cleaning cages or pens	% time___	
89	6. Training dogs	% time___	
50	7. Weighing, measuring & preparing animals' foods	% time___	
99	8. Grooming animals	% time___	
132	9. Watering animals	% time___	
	10. Other	% time___	
	11. Other	% time___	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 16 - TASK ANALYSIS OF SELECTED EMPLOYEES

Salesperson, Flowers

DIRECTIONS

1. Record the following information:

   A. Your name __________________________________

   B. Name of firm you work for __________________________________

   C. Address of firm __________________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
90	1. Verifying addresses using various directories	% time____	
91	2. Contacting other florists by telephone	% time____	
60	3. Designing flower arrangements, wreaths, decorations and corsages	% time____	
61	4. Constructing flower arrangements, wreaths, decorations and corsages	% time____	
86	5. Advising customers as per purchases of merchandise	% time____	
85	6. Selling	% time____	
15	7. Setting up displays of merchandise	% time____	
	8. Other	% time____	
	9. Other	% time____	
	10. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 17 - TASK ANALYSIS OF SELECTED EMPLOYEES

Greenskeeper II

DIRECTIONS

1. Record the following information:

   A. Your name ____________________

   B. Name of firm you work for ____________________

   C. Address of firm ____________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
22	1. Mowing and/or trimming lawns using power tools	% time____	
21	2. Mowing and/or trimming lawns using hand tools	% time____	
65	3. Pruning	% time____	
75	4. Fertilizing lawns, trees, shrubs & flowers by hand	% time____	
76	5. Fertilizing lawns, trees, shrubs & flowers by power	% time____	
69	6. Irrigating plants, lawns, shrubs & trees using hand hose	% time____	
70	7. Irrigating plants, lawns, shrubs & trees using power equipment	% time____	
24	8. Planting by hand	% time____	
25	9. Planting with power equipment	% time____	
125	10. Transplanting by hand	% time____	
126	11. Transplanting with power equipment	% time____	
123	12. Cultivating by hand	% time____	
124	13. Cultivating with power equipment	% time____	
	14. Other	% time____	
	15. Other	% time____	
	16. Other	% time____	
	17. Other	% time____	

THANK YOU FOR YOUR COOPERATION.

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SCHEDULE 18 - TASK ANALYSIS OF SELECTED EMPLOYEES

Buyer, Agricultural Produce

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate per cent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
92	1. Purchasing produce	% time____	
93	2. Arranging for transportation of produce	% time____	
94	3. Transporting produce	% time____	
95	4. Processing or re-packing produce	% time____	
96	5. Inspecting, sorting or grading produce	% time____	
	6. Other	% time____	
	7. Other	% time____	
	8. Other	% time____	
	9. Other	% time____	
	10. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 19 - TASK ANALYSIS OF SELECTED EMPLOYEES

Groom

DIRECTIONS

1. Record the following information:

   A. Your name ____________________

   B. Name of firm you work for ____________________

   C. Address of firm ____________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
50	1. Weighing, measuring and preparing animals' foods	% time____	
51	2. Feeding animals	% time____	
97	3. Caring for sick animals including administering medication	% time____	
87	4. Inspecting animals for disease or infection	% time____	
52	5. Cleaning cages or pens	% time____	
98	6. Harnessing and/or saddling horses	% time____	
99	7. Grooming animals	% time____	
100	8. Shoeing horses	% time____	
131	9. Exercising animals	% time____	
132	10. Watering animals	% time____	
	11. Other	% time____	
	12. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 20 - TASK ANALYSIS OF SELECTED EMPLOYEES

Tree Surgeon Helper

DIRECTIONS

1. Record the following information:

A. Your name ______________________________

B. Name of firm you work for ______________________________

C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
101	1. Cutting limbs from trees by hand	% time____	
102	2. Cutting limbs from trees with power equipment	% time____	
68	3. Spraying or dusting trees, shrubs & flowers with insecticides, fungicides, herbicides	% time____	
75	4. Fertilizing lawns, trees, shrubs & flowers by hand	% time____	
76	5. Fertilizing lawns, trees, shrubs & flowers by power equipment	% time____	
65	6. Pruning	% time____	
113	7. Felling trees by hand	% time____	
114	8. Felling trees with power equipment	% time____	
	9. Other	% time____	
	10. Other	% time____	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 21 - TASK ANALYSIS OF SELECTED EMPLOYEES

Animal Caretaker, Agricultural

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
40	1. Keeping breeding records	% time____	
51	2. Feeding animals	% time____	
97	3. Caring for sick animals including administering medication	% time____	
87	4. Inspecting animals for disease or infection	% time____	
88	5. Regulating ventilation and heating	% time____	
52	6. Cleaning cages or pens	% time____	
103	7. Shipping small animals	% time____	
49	8. Keeping feeding records	% time____	
50	9. Weighing, measuring & preparing animals' foods	% time____	
132	10. Watering animals	% time____	
	11. Other	% time____	
	12. Other	% time____	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 22 - TASK ANALYSIS OF SELECTED EMPLOYEES

Campground Caretaker

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
62	1. Cleaning or maintaining grounds	% time____	
104	2. Advising campers as to regulations pertaining to use of camp grounds	% time____	
105	3. Disposing of paper and refuse	% time____	
	4. Other	% time____	
	5. Other	% time____	
	6. Other	% time____	
	7. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 23 - TASK ANALYSIS OF SELECTED EMPLOYEES

Salesperson, Lawn & Garden Supplies

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
106	1. Arranging trade-ins and credit terms	% time____	
107	2. Watering and trimming growing plants on display	% time____	
85	3. Selling	% time____	
86	4. Advising customers as per purchases of merchandise	% time____	
83	5. Demonstrating merchandise	% time____	
15	6. Setting up displays of merchandise	% time____	
14	7. Stocking shelves or racks	% time____	
80	8. Preparing sales slips and receive payment thereof	% time____	
	9. Other	% time____	
	10. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 24 - TASK ANALYSIS OF SELECTED EMPLOYEES

Nurseryman

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
108	1. Determining plants to be grown	% time____	
109	2. Hiring and supervising nursery workers	% time____	
110	3. Managing nursery	% time____	
111	4. Supervising marketing activity of sales personnel	% time____	
112	5. Purchasing seeds, fertilizers & garden equip.	% time____	
86	6. Advising customer as per purchases of merchandise	% time____	
	7. Other	% time____	
	8. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 25 - TASK ANALYSIS OF SELECTED EMPLOYEES

Logger, All-Round

DIRECTIONS

1. Record the following information:

   A. Your name ____________________

   B. Name of firm you work for ____________________

   C. Address of firm ____________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
113	1. Felling trees by hand	% time____	
114	2. Felling trees with power equipment	% time____	
115	3. Fastening choker chains	% time____	
116	4. Sawing logs into specified lengths	% time____	
133	5. Skidding logs	% time____	
	6. Other	% time____	
	7. Other	% time____	
	8. Other	% time____	

THANK YOU FOR YOUR COOPERATION

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SCHEDULE 26 - TASK ANALYSIS OF SELECTED EMPLOYEES

Tree Surgeon

DIRECTIONS

1. Record the following information:

   A. Your name ______________________________

   B. Name of firm you work for ______________________________

   C. Address of firm ______________________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
117	1. Scraping and filling tree wounds	% time____	
65	2. Pruning	% time____	
68	3. Spraying or dusting trees, shrubs, and flowers with insecticides, fungicides or herbicides	% time____	
75	4. Fertilizing lawns, trees, shrubs & flowers by hand	% time____	
76	5. Fertilizing lawns, trees, shrubs & flowers with power	% time____	
24	6. Planting by hand	% time____	
25	7. Planting with power equipment	% time____	
125	8. Transplanting by hand	% time____	
126	9. Transplanting with power equipment	% time____	
	10. Other	% time____	
	11. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 27 - TASK ANALYSIS OF SELECTED EMPLOYEES

Truck Driver (Bulk Tank)

DIRECTIONS

1. Record the following information:

A. Your name ____________________

B. Name of firm you work for ____________________

C. Address of firm ____________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER". Use back of page if necessary.

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
16	1. Driving truck	% time____	
5	2. Examining milk and dairy products for dirt & odor	% time____	
137	3. Sampling milk for laboratory analysis	% time____	
138	4. Computing and recording weight of milk in tank	% time____	
139	5. Washing truck	% time____	
140	6. Cleaning and sterilizing tanks	% time____	
	7. Other	% time____	
	8. Other	% time____	
	9. Other	% time____	

THANK YOU FOR YOUR COOPERATION

SCHEDULE 28 - TASK ANALYSIS OF SELECTED EMPLOYEES

Packer, Agricultural Produce

DIRECTIONS

1. Record the following information:

   A. Your name ____________________

   B. Name of firm you work for ____________________

   C. Address of firm ____________________

2. For your present job, indicate the approximate percent of time during the period of one year that you spend on each of the tasks listed below. Leave blank any task you do not perform. IF YOU PERFORM TASKS NOT LISTED, WRITE THEM IN AFTER THE WORD "OTHER".

3. In the fourth column, check the TWO tasks which you feel were the most difficult to learn.

Code	Task Performed	Approximate Percent of Time Spent	Two Tasks Most Difficult To Learn
118	1. Loading boxes, cartons or crates on pallets or push some items on to rollers or conveyors	% time____	
119	2. Lining boxes, cartons or crates	% time____	
120	3. Lidding boxes, cartons or crates	% time____	
121	4. Washing produce	% time____	
96	5. Inspecting, sorting or grading produce	% time____	
122	6. Stamping produce	% time____	
9	7. Wrapping products by hand	% time____	
10	8. Wrapping products with power equipment	% time____	
	9. Other	% time____	
	10. Other	% time____	
	11. Other	% time____	

THANK YOU FOR YOUR COOPERATION

APPENDIX C

OFF-FARM JOB TITLES IDENTIFIED IN AGRICULTURAL SIC CODES

First & Second Quarters 1966, New York State

Animal breeder
*Animal caretaker
*Animal caretaker (med)
Animal technician (lab)
Apple packing header
Auctioneer
Barn boss
Beekeeper
Bucker
*Buyer, agricultural produce
Buyer, log
Camp attendant
*Campground caretaker
Caretaker's helper (animal)
Carrot grader-inspector
Chief cruiser
Commission man, agricultural produce
Custom feed mill operator
*Dairy plant worker
Dairy tester
Elevator man or grain man
Equipment and/or set-up man
*Equipment operator
*Farm hand, general I
Feed store or mill helper
Field checker
Field man
Floral designer
Flower grader
Flower grower
*Foreman
Fur farmer
General utility (dairy plant)
Greenhouse worker
Greenskeeper I
*Greenskeeper II
*Groomer (horse, etc.)
*Groundskeeper
Handler (animal)
Hook tender
Horse trainer I
Horseshoer
Hunting & fishing guide
*Kennelman
Laboratory technician, veterinary
*Laborer, landscape
Laborer, stores
*Landscape gardener
Log grader
*Logger, all-round
*Mechanic I
Mechanic helper
Migrant leader
Milk receiver
Milk sampler
Nursery worker
*Nurseryman
*Packer, agricultural produce
Painter, automobile
Parts man
Parts order clerk
*Sales clerk, flowers
*Sales clerk, general
Sales contact man
*Sales person, lawn & garden equip. & supp.
Sales person, parts
Sales person, pets & pet supplies
Salesman, automobile
Salesman, automobile parts
*Salesman driver
Salesman driver helper
*Salesman, farm & garden equip. & supp.
Salesman, grain & feed products
Salesman, livestock
Service manager, milking machines
Serviceman
Sprayer
Stockman
Tree pruner
*Tree surgeon
*Tree surgeon helper
Tree trimmer groundman
Truck driver, bulk tank
*Truck driver, heavy
Truck driver, helper
*Truck driver, light
Vegetable thinner
Washer, agricultural produce
Weigher
Welder - any industry
Woods boss
Yardman

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*Selected for job task analysis

APPENDIX D

Projected Number of Full-Time Agricultural Jobs, by SIC Code - 1965, 1966, and 1971
- As Reported by Employers*

		1965			1966			1971		
SIC Code	Firm Code Name	Mean Estimate	Upper Range	Lower Range	Mean Estimate	Upper Range	Lower Range	Mean Estimate	Upper Range	Lower Range
0192	Horticulture specialties	455	624	287	491	672	309	638	870	400
0193	Animal specialties	130	185	76	132	188	77	160	227	93
0715	Vegetable industries	126	197	55	126	197	55	130	204	57
0719	Agri. serv. not class. els.	129	182	76	131	184	77	176	248	104
0731	Horticultural services	7,133	9,072	5,195	7,640	9,717	5,564	9,940	12,642	7,238
2026	Fluid milk industry	16,822	21,115	12,530	17,585	22,072	13,098	15,932	19,998	11,867
0722	Offices of veterinarians	649	807	491	675	839	511	922	1,146	698
0729	Animal services n.c.e.	318	408	227	479	616	342	436	561	311
2411	Logging camps	264	343	185	277	360	194	229	298	161
5252	Farm equipment dealers	1,476	1,859	1,093	1,711	2,155	1,267	2,100	2,645	1,555
5962	Hay, grain, and feed stores	1,872	2,308	1,437	1,914	2,361	1,539	1,938	2,388	1,487
5969	Farm and garden supply	707	894	520	782	989	575	862	1,090	634
5992	Florists	2,599	3,268	1,930	2,658	3,342	1,974	3,288	4,134	2,442
7032	Recreational camps	366	460	272	513	645	381	496	624	369
7942	Public golf courses	133	177	89	133	177	89	169	225	113
7947	Private golf clubs	1,070	1,340	799	1,012	1,268	756	1,324	1,659	989
7948	Race tracks	1,808	2,342	1,274	2,262	2,930	1,594	1,801	2,333	1,269
TOTALS		36,057	45,581	26,536	38,521	48,712	28,402	40,541	51,292	29,787

* Ranges represent one standard deviation above and below the mean at the 95 percent confidence interval

Projected Number of Part-Time Agricultural Jobs, by SIC Code - 1965, 1966, and 1971
- As Reported by Employers*

SIC Code	Firm Code Name	1965 Mean Estimate	1965 Upper Range	1965 Lower Range	1966 Mean Estimate	1966 Upper Range	1966 Lower Range	1971 Mean Estimate	1971 Upper Range	1971 Lower Range
0192	Horticulture specialties	206	283	130	296	405	186	234	320	147
0193	Animal specialties	71	100	41	75	106	43	86	122	50
0715	Vegetable industries	27	42	12	41	64	18	33	51	14
0719	Agri. serv. not class. els.	144	203	85	157	221	93	118	166	70
0731	Horticultural services	2,183	2,776	1,590	2,846	3,619	2,072	2,885	3,669	2,101
2026	Fluid milk industry	773	971	576	847	1,064	631	922	1,157	686
0722	Offices of veterinarians	357	444	270	383	476	290	377	468	285
0729	Animal services n.c.e.	81	104	58	86	111	62	75	97	54
2411	Logging camps	147	191	103	117	152	82	65	84	45
5252	Farm equipment dealers	489	616	362	643	810	476	679	855	503
5962	Hay, grain, and feed stores	238	293	182	333	410	255	178	220	137
5969	Farm and garden supply	563	712	414	588	743	432	543	686	400
5992	Florists	1,477	1,857	1,097	1,713	2,154	1,272	1,851	2,327	1,375
7032	Recreational camps	610	767	453	643	808	477	610	767	453
7942	Public golf courses	124	165	83	120	160	80	150	200	100
7947	Private golf clubs	955	1,197	713	910	1,141	680	1,031	1,292	770
7948	Race tracks	85	110	60	213	276	150	71	92	50
TOTAL		8,530	10,786	6,274	10,011	12,720	7,302	9,908	12,573	7,243

* Ranges represent one standard deviation above and below the mean at the 95 percent confidence interval

APPENDIX E

Frequency of Task Performance by Job Title, SIC Code With the Percent of Time Spent and Task Difficulty*

Task	Job Titles	S.I.C. Codes	Mean Percent of Time	% of Time Most Difficult*	Employees Performing Task
Estimating merchandise quantity for customer needs	10	5	34	29	49
Servicing maintenance equipment and/or equip. (repair or lub.)	9	9	17	29	17
Janitorial, general clean up	7	6	12	-	16
General office work	8	6	35	9	11
Setting up displays of merchandise	6	6	8	34	32
Driving truck	6	9	39	11	66
Fertilizing lawns, trees, shrubs, flowers by power	6	3	16	38	16
Miscellaneous	6	4	15	-	7
Mowing and/or trimming lawns using power equipment	5	3	37	38	26
Repairing farm structures	5	4	16	57	7
Cleaning or maintaining grounds	5	4	27	17	12
Preparing sales slips and receive payment thereof	5	4	13	9	41
Advising customers as per purchases of merchanidise	5	5	18	12	26
Deliveries or pick up of merchandise, animals	5	3	20	-	9
Collecting for services and/or deliveries	4	5	21	20	46
Stocking shelves or racks	4	3	13	6	36
Assisting & coordinating co. policy, production with var. depts. and/or state and federal reports	4	5	10	36	11
Feeding animals	4	4	13	3	32
Cleaning cages or pens	4	5	27	4	28
Pruning	4	3	12	25	12
Painting	4	4	11	30	10
Spraying, dusting trees, shrubs, flowers with insecticides, fungicides or herbicides	4	3	12	53	15
Irrigating plants, lawns, shrubs & trees using hand hose	4	4	22	20	15
Processing or re-packing produce	4	3	13	40	5
Grooming animals	4	5	30	40	15
Loading or unloading truck by hand	4	8	20	6	82
Loading or unloading truck by power equipment	4	5	20	28	25

Frequency of Task Performance by Job Title, SIC Code with the Percent of Time Spent and Task Difficulty*

Task	Job Titles	S.I.C. Codes	Mean Percent of Time	% of Time Most Difficult*	Employees Performing Task
Weighing Products	3	2	12	20	20
Mowing and/or trimming lawns by hand	3	2	13	14	14
Planting by hand	3	2	3	8	12
Weighing, measuring and Preparing animals' foods	3	3	6	14	7
Irrigating plants, lawns, shrubs & trees using power equip.	3	2	14	25	12
Fertilizing lawns, trees, shrubs & flowers by hand	3	3	13	9	12
Making minor repairs	3	8	8	26	26
Demonstrating merchandise	3	3	6	6	17
Caring for sick animals incl. administering medication	3	3	10	13	16
Felling trees with power equipment	3	3	19	75	8
Cultivating by hand	3	2	5	-	5
Transplanting with power equipment	3	3	5	-	4
Watering animals	3	3	16	-	18
Requisitioning merchandise or materials	3	4	7	17	18
Tending machinery that mixes stock or poultry feeds	3	2	39	37	19
Bookkeeping	3	3	40	33	6
Packing products by hand	2	2	20	-	7
Wrapping products by hand	2	2	43	50	2
Writing delivery orders	2	1	6	14	14
Spreading and leveling soil using hand tools	2	3	4	29	7
Spreading and leveling soil using power equipment	2	2	8	-	2
Maintaining time and production records	2	5	20	-	10
Reading plans and specifications for workers	2	3	11	20	5
Keeping breeding records	2	2	9	-	12
Examining machines, gas & diesel engines, equip. for repair or operations defect	2	3	16	38	16
Lubricating machines or equipment	2	4	5	6	18

Frequency of Task Performance by Job Title, SIC Code with the Percent of Time Spent and Task Difficulty*

Task	Job Titles	S.I.C. Codes	Mean Percent of Time	% of Time Most Difficult*	Employees Performing Task
Ordering feed and supplies	2	1	18	-	2
Keeping feeding records	2	2	6	-	4
Designing flower arrangements, wreaths, decorations, corsages	2	2	24	54	11
Constructing flower arr., wreaths, decorations, corsages	2	1	31	36	11
Raking leaves and litter	2	2	14	-	9
Inspecting animals for disease or infection	2	2	9	73	15
Regulating ventilation and heating	2	2	5	-	5
Purchasing produce	2	1	31	75	4
Inspecting, sorting or grading produce	2	1	8	-	2
Shipping small animals	2	1	5	-	4
Advising campers re regulations-use of camp grounds	2	1	15	-	2
Hiring, supervising nursery workers and/or golf course workers	2	2	25	50	2
Purchasing seeds, fertilizers and garden equipment	2	2	28	50	2
Sawing logs into specified lengths	2	2	31	33	9
Cultivating with power equipment	2	2	8	-	5
Transplanting by hand	2	2	4	13	8
Exercising animals	2	2	4	50	2
Calling on potential customers	2	1	5	18	11
Adjusting equipment	2	2	15	43	14
Sampling milk for laboratory analysis	2	1	8	50	2
Computing and recording weight of milk	2	1	8	50	2
Washing truck	2	1	9	-	2
Cleaning and sterilizing tanks, machines	2	1	14	-	3
Whipping greens	2	1	5	66	3
Vet-laboratory assistant	2	3	33	57	7
Supervise breeding of animals	2	1	10	100	10

APPENDIX F

Number of Employees in All Agricultural Industries Studied
One Year Ago, At Present, Five Years Hence

SIC Code	Agricultural Industry	Full-Time			Part-Time		
		One Year Ago	At Present	5 Years Hence	One Year Ago	At Present	5 Years Hence
0192	Horticultural Specialties	124	133	170	56	79	63
0193	Animal Specialties	73	74	87	41	43	50
0715	Contract Sorting, Grading & Packing	91	91	93	19	29	24
0719	Agricultural Services NCE	69	70	94	80	89	66
0722	Offices of Vets and Animal Hospitals	130	140	191	72	85	72
0729	Animal Husbandry Services	73	112	103	18	20	16
0731	Horticultural Services	188	201	259	56	74	74
2026	Fluid Milk	1,615	1,686	1,531	74	81	88
2411	Logging Camps	74	84	73	34	27	15
5252	Farm Equipment Dealers	169	197	238	56	74	78
5962	Hay, Grain & Feed Stores	367	379	374	44	62	33
5969	Farm & Garden Supply Stores	174	190	213	131	138	122
5992	Florists	138	141	177	80	94	99
7032	Sporting & Recreational Camps	302	329	342	641	763	562
7942	Public Golf Courses	88	88	106	80	74	92
7947	Golf Clubs & Country Clubs	219	220	283	230	216	243
7948	Race Track Operation	292	367	278	44	66	42
TOTAL		4,186	4,502	4,612	1,756	2,014	1,739

APPENDIX G

Number of Off-Farm Agricultural Employees in 28 Firms in the Horticultural Specialties Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Mechanic	1		1		1							
Mechanic helper	1	1	1	1	1	1						
Equipment operator		4		1		3						
Foreman	13	4	11		14	3						
Floral designer	7	5	6	5	7	4						
Flower grower	8	4	8	3	8	1		3				2
Greenskeeper	1		1									
Landscape gardener	19	12	19	13	22	19	2	3	6	8	5	12
Nurseryman	11	4	6	2	17	4		2	6	3	2	1
Nursery worker	8	5	10	7	12	4	4		4	2	3	
Salesman	9	1	7	1	9	1						
Sales clerk	2	2	2	4	1			1				
Tree surgeon	1		1		1							
Truck driver	6	1	6		6	1	2	1	1		1	
Truck driver, helper	1		1		1							
Flower grader	8		8		8		5		5		5	
TOTAL	96	43	88	37	108	41	13	10	22	13	16	15

Number of Off-Farm Agricultural Employees in 22 Firms in the Animal Specialties Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Animal breeder	5	3	5	1	4	1	2		1	2	1	
Beekeeper	1		1	2								1
Caretaker, animal	34	7	34	6	41	9	6	7	11	2	14	3
Mechanic					1							
Equipment Operator	2		2		2							
Foreman	4		4		4							
Fur farmer	4		4		3				1		1	
Kennelman	11	9	10	8	17	15	1	7	3	6	9	5
Salesman	2	1	3	1	3							
Sales clerk		11		11		11		3		6		6
Truck driver	2		1		2							
Packer	2		2		2							
Animal technician		1		1	1	1						
Handler		1		1		1						
Caretaker's helper	1	1	1	1	2	2						1
TOTAL	68	34	67	32	82	40	9	17	16	16	25	16

Number of Off-Farm Agricultural Employees in 12 Firms in the Contract Sorting, Grading & Packing Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Apple packing header	13		16		13				10			
Grader, vegetable	5		5		8							
Mechanic	1								1		1	
Equipment operator	12		12		6		1		1		1	
Foreman	5		5		4							
Packer	25	4	24		29		1		3	4	3	4
Salesman	3		4		5							
Truck driver	5	1	4	1	5	1			2		2	
Truck driver, helper	1		1		1							
Washer, agricultural produce	2		2		2							
Weigher	11		10		8		1		1		2	
Nursery worker		3		3								
Grain man	1		1									
Mill helper	1		1				1		1		1	
Vegetable thinner	4		4		11		1		4		4	
TOTAL	89	8	89	4	92	1	5		23	4	14	4

Number of Off-Farm Agricultural Employees in 23 Firms in the Agricultural Services Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one yr E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Animal caretaker	4	1	4	1	4	2		2				3
Auctioneer	7	8	9	7	8	5	2		1		2	1
Mechanic	2		2		2							
Mechanic helper	1	1		1	2	1				1	1	1
Equip. oper. (tractor,etc.)	3	6	4	7	4	5		3	1	3	1	
Foreman	2		2		4		1		1		3	
Sprayer	1	3	1	3	2	5		2				3
Tree pruner	6		4		8				2			
Field checker		1		1		1				1		
Tree surgeon	6		6		12				2			
Tree surgeon, helper	12		8		16		6		10			
Truck driver	16	26	22	24	24	11		1	12	6	12	1
Truck driver, helper	2	3	2	3	2	3		1	1	1		
Weigher	3	5	1	5	2	4				1		1
TOTAL	65	54	65	52	90	37	9	9	30	13	19	10

Number of Off-Farm Agricultural Employees in 65 Firms in the Veterinarians & Animal Hospitals Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Animal caretaker	25	10	23	10	34	10	10	8	1	7	1	10
Dog trainer		1		1		1		1		1		
Kennelman	68	39	65	36	90	37	14	33	19	23	28	30
Laboratory technician, vet	10	3	9	2	16	3	6	2	3	1	2	
Truck driver		1	2		1	1			2			
Salesperson		5		6		6		4				1
Groom	1		1		1					1		
TOTAL	104	59	100	55	142	58	30	48	25	33	31	41

Number of Off-Farm Agricultural Employees in 23 Firms in the Animal Husbandry Services Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Foreman	2		2		2		1		1			
Horseshoer		4		5		3		1				1
Kennelman	3	1	2		4	2	1		1	2	2	2
Animal caretaker		1	1	1	3			1		1		1
Grainman		1		1		1						
Groom	71	6	39	3	59	5	14	1	22	3	52	6
TOTAL	88	15	58	13	80	13	19	4	29	8	58	12

Number of Off-Farm Agricultural Employees in 52 Firms in the Horticultural Services Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Equipment operator	15	7	18	7	32	10	7	5	5	3	19	6
Foreman	20	2	16	2	20	2	3		3	2	6	1
Groundskeeper	20	12	2		4				2			
Landscape gardener	18	14	20	11	26	13	8	2	3	4	4	4
Laborer, landscape	68	24	73	26	96	37	17	7	27	8	44	14
Mechanic	4	1	4	2	5				4		3	
Nurseryman	1											
Nursery worker	1				3							
Salesman	1	2		2	1	1						
Tree surgeon	17	1	18		28		4		5		7	
Tree surgeon, helper	5	3	5		10		5					
Tree trimmer	7		8		9	1						2
Tree trimmer, groundman	3	1	3		2	3				1		1
Truck driver	13	5	13	5	16	6	1		1	1	2	4
Truck driver, helper	2	1	2	1		1						
Barn boss					1							
Milk sampler	1		1		2							
TOTAL	196	73	175	56	255	74	45	14	50	19	85	32

Number of Off-Farm Agricultural Employees in 59 Firms in the Fluid Milk Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old of younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Dairy plant worker	552	24	557	23	544	29	9	5	42	4	41	7
Equipment operator	104	1	114		110		1		4		3	
Dairy tester	18		14		20				5		5	
Foreman	54		54		53	1			3		3	
Mechanic	47	1	47		42	1			5	1	3	1
Mechanic, helper	5	2	5	1	5	2		1	3	1	2	1
Milk receiver	15	1	15	1	16		1		1			
Milk sampler	13	1	13	1	13				1			
Sales clerk	52	32	50	32	51	33	9	23	12	10	11	6
Salesman, driver	572	11	525	10	441	8	8	2	46	3	53	2
Salesman, driver helper	4		4		1				1		1	
Truck driver	51	2	54	1	86	9	1		1	1	4	1
Truck driver, helper	1	3	1	3	3	3	1	3				
Truck driver, bulk tank	6	1	5	1	7	1			1		1	
Field man	1		1		1							
Migrant leader	1		1		1							
Sales contact man	3		3		3							
General utility	152		153		153							
TOTAL	1652	79	1616	73	1550	87	30	34	125	20	127	18

Number of Off-Farm Agricultural Employees in 43 Firms
in the Logging Camps Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Bucker, logging	3	1	3	1	2			1				
Buyer		2		2	1	1						1
Chief cruiser		1		1								1
Equipment operator	20	2	19	2	18		2		2	1	22	5
Foreman	3		3		1		1					
Hook tender	1		1									
Logger, all-round	21	13	23	23	22	14	7		6	2	13	5
Log grader		1		1								
Mechanic	1		1									
Truck driver, heavy	7	4	5	4	4				1	1		3
Truck driver, light	3	2	2		1		1		1		2	
Yardman	3	1	2		2				1		1	
Salesperson	2		2		2							
TOTAL	64	27	60	34	53	15	11	1	11	4	38	15

Number of Off-Farm Agricultural Employees in 57 Firms in the Farm Equipment Dealers Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Diesel mechanic	11	2	10	2	12	4	2	1	1		1	1
Equipment operator	4	1	4		5			1				
Farm machinery set-up man	15	16	15	14	26	14	5	3	4	3	4	6
Foreman	7		7		6		1		1		1	
Mechanic	62	17	52	16	75	15	12	2	9	3	13	2
Mechanic, helper	8	11	5	10	6	12	2	7	2	4	2	7
Painter	1	1	1		1							
Parts order clerk	12	2	11	1	16	12	1		1		2	
Salesman	25	5	19	2	28	4	4		4	1	5	
Sales clerk, parts	14	2	13		14	2	3	1	2		2	
Service manager	7	1	6	1	11	1	1		1		1	
Truck driver, heavy	5	3	4	2	6	2			1		1	
Truck driver, helper	4		3		4				1		1	
Truck driver, light	7	3	7	1	7	5		2	1	1	1	2
Welder	3	4	3	2	7	2			1			
Salesman	1		1		2							
Weigher	3		2		4				1		1	
Serviceman		1		1	2				1			
TOTAL	189	69	163	52	232	73	31	17	31	12	35	18

Number of Off-Farm Agricultural Employees in 71 Firms in the Hay, Grain & Feed Stores Industry, 1966

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from Outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Buyer	16	2	12	2	16	2	2		1			
Equipment operator	18	3	16	4	22	1	2		4	1	2	
Field man	2	2	2		2	3			1	1	1	
Foreman	28	3	26	2	26	2	1		3	1	2	1
Feed store or mill helper	65	14	69	12	47	3	15	3	18	5	18	6
Mechanic	13		12		18				2		2	
Mechanic, helper	1		1		2							
Salesman, driver	8		6		13		1		1		1	
Salesman	14	14	15	6	25	7	7			3		1
Sales clerk	31	1	32	1	32		3		4		3	
Truck driver, heavy	64	6	59	6	67	3	1		7		7	1
Truck dirver, helper	3	5	3	5	2	6	1	4	1	2	1	2
Truck driver, light	25	2	25		25		14		8		6	
Grainman	8	4	7	2	7	3		1	1	2		1
Salesman	1		1		1							
Salesman, parts	1		1		1							
Woods boss	1		1									
Serviceman	1		1		1		1					
	17		17		14		3					
TOTAL	317	56	309	40	321	30	51	8	51	15	43	12

Number of Off-Farm Agricultural Employees in 55 Firms
in the Farm & Garden Supply Stores Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from Outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Equipment operator	16	2	15	2	14						1	
Equipment set-up man	4		4		4						1	
Foreman	14	1	12	2	14				1	1	1	1
Laborer, farm & garden stores	10	28	10	30	13	34	4	14	1	9		8
Mechanic	7	17	7	16	12	17			2	6	3	
Mechanic, helper	1	1	1	1	2							
Nurseryman	9	2	6	1	13			1	1	2		1
Salesman	30	18	26	16	37	18	4	8	3	8	3	2
Sales clerk	27	17	25	15	27	17	1	14	6	6	9	4
Truck driver, heavy	25	5	24	4	26	4	3	3	4	1	6	1
Truck driver, helper		3		3		3		1		1		2
Truck driver, light	7	8	5	7	5	6	3	5	4	2	2	4
Nursery worker	1		1		1							
Packer	2		2		2		1	1		1		1
Partsman	1		1		2				1		1	
Stockman	1	10	1	10	1	10	10			10		
Truck driver, Bulk Tank	2	6	2	6								
TOTAL	157	118	142	113	173	109	26	47	23	47	27	24

Number of Off-Farm Agricultural Employees in 58 Firms in the Florists Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from Outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Buyer	11	2	14	1	16	1	1		1	1	1	
Floral designer	57	24	52	26	68	31	8	8	6	6	5	5
Foreman	5	1	5	1	5	1	1	2	1		1	
Greenhouse worker	13	18	12	18	15	27	2	8	1	5	1	6
Nursery worker						1						
Sales clerk	25	17	24	11	30	15	3	1	8	4	3	6
Truck driver, light	23	25	24	18	32	18	5	10	9	8	6	7
Packer	1		1		1							
TOTAL	135	87	132	75	167	94	20	29	26	24	17	24

Number of Off-Farm Agricultural Employees in 58 Firms in the Sporting and Recreational Camps Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from Outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Camp attendant	21	2	21	2	21		1		1		1	
Camp ground caretaker	29	34	17	33	25	28	6	23	6	10	4	18
Equipment operator	1	6		6		4				4		6
Greenskeeper	1	1	1	1	1	1	1		1		1	
Hunting & fishing guide	3	26	2	22	9	30						
Mechanic	3	6	2	6	3	7	2		1	3	1	3
Truck driver, light	2	4	2	5	2	5	2	1	1	4	2	4
TOTAL	60	79	45	75	61	75	12	24	10	21	9	31

Number of Off-Farm Agricultural Employees in 35 Firms in the Public Golf Courses Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from Outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Equipment operator	7	4	5	4	8	4	2		4		1	2
Greenskeeper	24	9	23	9	29	12	6	2	3	3	4	8
Groundskeeper	12	9	11	11	18	11	5	8	2	4	1	11
Laborer, Golf Course	18	33	23	33	23	42	6	28	8	19	7	30
Mechanic	1	1		1	1	1		1	1	1		1
TOTAL	62	56	62	58	79	70	19	39	18	27	13	52

Number of Off-Farm Agricultural Employees in 60 Firms
Golf Clubs & Country Clubs Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from Outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Equipment Operator	22	18	38	17	44	18	4	3	1	2	7	1
Greenskeeper II	37	22	37	18	39	25	2	14	10	7	4	5
Groundskeeper	30	22	36	14	45	18	6	11	2	13	3	6
Laborer, Golf Course	58	72	46	93	65	88	8	20	9	10	20	31
Landscape gardener	3	5	3	4	4	9		2	1	5	5	1
Mechanic	6		5		6	1	3					
Truck driver, light		3		3		1		1		1		
Greenskeeper I	2	1	2	1	3	2				1		1
Migrant leader	1		1		2		1					
TOTAL	159	143	168	150	208	162	24	51	23	39	39	45

Number of Off-Farm Agricultural Employees in 44 Firms in the Race Track Operation Industry

Selected job title in unskilled, semi-skilled, skilled, service and sales occupations	Number at present A		Number one year ago B		Number anticipated in five years C		Number 20 years old or younger D		Number in present job title less than one year E		Number hired from Outside of firm in past year F	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
Animal caretaker	188	12	190	9	180	8	29	4	65	4	100	6
Equipment operator	4		3		4							
Groundskeeper	2	1	2		2		1					
Laborer, race track	55	12	53	1	61	2	2		8	1	8	1
Landscape gardener		1										
Mechanic	1		1		1							
Truck driver, light	2		2		2							
Commission man	62											
Groom	5	4	4	2	4			1				4
TOTAL	319	30	255	12	254	10	32	5	73	5	108	11